fueloil & oil heat

DECEMBER
1961
★ ★ ★
EDITION

39 Years devoted to Progress in Oilheating and Airconditioning

Progress ❋ at NOFI

Pollution ❋ Problems

Conversion ❋ Gas & Oil

Portables ❋ build Volume

PASS ALONG

Mr.

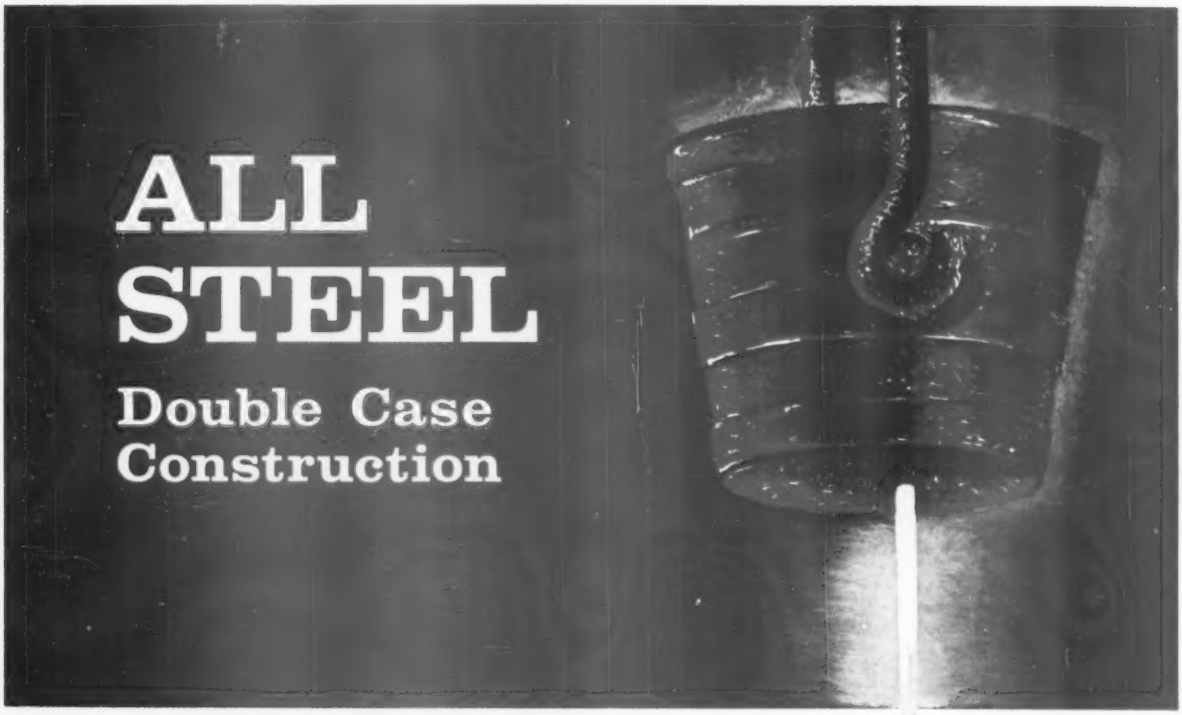
Mr.

Mr.

Mr.

Mr.

Only BRODIE...



BRODIE BiRotor METERS
Proved on thousands of jobs!

Shocks and strain have no effect on either the accuracy or performance of the **BiRotor**... and there are good reasons why:

The simple rotary measuring units are completely protected... damage safe from external shocks, internal surges or pressures ... safe behind all-steel, double case construction that doubly assures long term accuracy, efficiency, and low cost maintenance.

When you need a rugged meter that can "take it" and still give full rated capacity month after month, you need a Brodie **BiRotor** — the only meter made with **all-steel, double case construction.** For all uses — check the **BiRotor** first — today!

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108

REPRESENTATIVES WITH STOCKS AND SERVICE FACILITIES IN ALL PRINCIPAL CITIES

Best Wishes For A Happy Holiday and a prosperous New Year to all our many friends in the oil heating industry, who have helped make Sundstrand fuel units the most popular pumps in America. We shall continue to justify your support by furnishing you the finest most trouble-free units that Sundstrand can design and build...

SUNDSTRAND HYDRAULICS

DIVISION OF SUNDSTRAND CORPORATION

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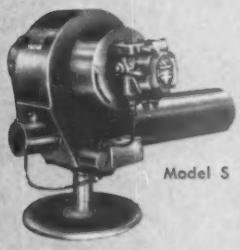
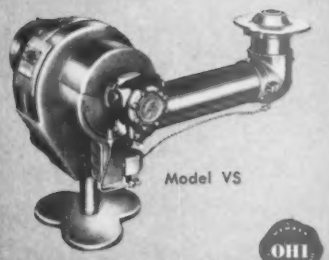
SUN-RAY
FULLY AUTOMATIC

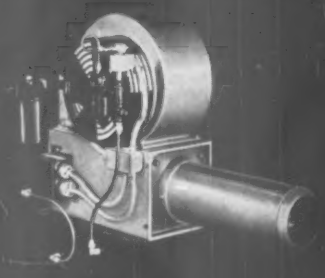
OIL BURNERS—WATER HEATERS—SUPPLY PUMPS

famous the world over for Quality and Economy

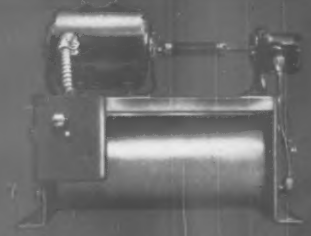
SUN-RAY "SHELL HEAD" OIL BURNERS
WITH ORIGINAL HIGH TEMPERATURE COMBUSTION HEAD
Capacities 0.5 to 10 G. P. H.


Model S


Model VS

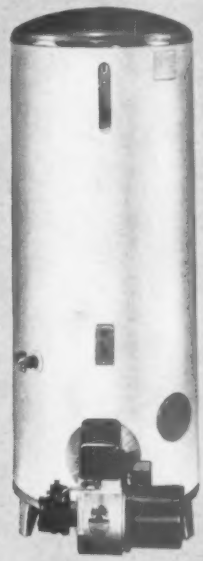


SUN-RAY #4-5 OIL BURNERS
Approved for #4 and #5 Oil
Capacities from 3 to 25 G. P. H.



FUEL TRANSFER AND SUPPLY PUMPS
2 Sizes—12 Models • Up to 360 G. P. H.
RAISES OIL AS HIGH AS 300 FT. FOR #1 THROUGH #6 OIL. IDEAL FOR OVERHEAD OR SUSPENDED INSTALLATIONS—LONG RUNS—HIGH LIFTS. MODELS AVAILABLE FOR OTHER LIQUIDS.

SUN-RAY OIL-FIRED WATER HEATERS
3 Sizes—8 Models
Copper-Lined, Glass-Lined, Stone-Lined



WILL SUPPLY UP TO 180 GALLONS OF HOT WATER PER HOUR—100°F. RISE. LONG, LIBERAL GUARANTEES. NO TEMPERATURE RESTRICTION ON STONE-LINED OR COPPER-LINED MODELS.

SUN-RAY BURNER MANUFACTURING CORPORATION

139-22 QUEENS BOULEVARD • JAMAICA 35, N. Y.

THE SUN-RAY FAMILY OF QUALITY PRODUCTS FOR HOMES • FACTORIES • WAREHOUSES
APARTMENT BUILDINGS • CHURCHES • SCHOOLS

fueloil & oilheat

Publication and Editorial Office:
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December 1961

VOLUME 20 NUMBER 12

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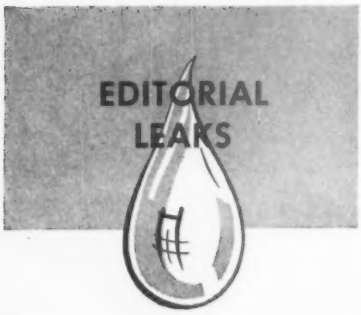
Among other things . . .

We take a look at the new association, the National Oil Fuel Institute. A report on the recent annual meeting starts on page 37, and the following picture pages introduce the man and woman power making the group so vital.

John Schulz provides the oil heat viewpoint on air pollution problems. Starting on page 41 he discusses the history of oilheating and then goes on with a series of examples that improved combustion.

An oilheating winner is described by Robert Tewalt on page 46. Here, a relatively new gas heating plant for a large Jersey apartment development was converted to oil on the very real proof of economy. Side benefits are: the oil equipment takes less space and is actually quieter than the original gas burners.

Cover photo: A welder makes final connections on a radiant heating installation at the Cherry Hill housing development, Harrisburg, Pa.



ONE OF THE MORE dramatic results of today's combination of surplus oil and high margins is the increasing buying of independent oil companies by major refiners. This point comes to mind again this month through the announcement that Atlantic Refining Co. has bought a controlling share of the stock of Buckley & Scott, one of New England's oldest and largest fuel-oil distributors.

There have been quite a number of these transactions and nearly every major company has bought out one or more strong marketers. Quite often they have done it contrary to their company's stated policy, to preserve the gallonage from going to some other supplier that was offering to buy the outfit. In some other instances they have bought quite large distributors to replace some much needed volume that they had lost to another's purchase.

A number of major men have said out loud that today's margins have gotten so high that they could save real money by direct-to-consumer selling. The interesting point here is that the distributors have not forced the high margins. More often it has been the refinery representatives offering deals to attract a prospective buyer. The original supplier will usually protect the situation.

There has been little point in trying to increase sales by pushing down the tankwagon price, since the user is already getting a bargain. Prices now are at bottom by comparison with the inflation in other fuel prices. So the competition between suppliers has been reflected in margin offerings.

Most refiners today would be happier if the local oil men would take and keep the consumer responsibility, but the drift will probably continue in the other direction. More companies will be bought rather than fewer.

Of course, all such deals combined over the past five years have not cut very deeply into total distributor gallonage since there are well over ten thousand fueloil companies with their principal dollar volume in that product, and the departures have been a very few hundred. But it does reflect a curious economic pattern.

EACH YEAR as the heating season opens there is considerable brand advertising in local newspapers of the very good oils sold by particular refiners. Then just as sure as the sun crosses the equinox and the leaves turn colors we get complaints from local oil men about the text of those ads. Usually the complaints are justified.

Advertising departments naturally want to glorify their wares, and it's hard to do without inferring that all fueloil is not as good . . . often with details on smoke, smudge and sludge.

The difficulty arises because these ad departments have been working with gasoline and lube oils which have no competition among other commodities, but only among brands. Fueloil is very different — it's real competitor is gas and electric energy.

Ken King, who masterminds the Wisconsin Petroleum Association, has an editorial in the October issue of his magazine which covers the point very well, recognizing of course that Ken was a little hot under the collar when he wrote it.

"This month we embark on presenting our 1962 Oil Heat Promotion campaign to over 40 markets throughout the state. This is a back-breaking, tedious undertaking and there are times when we wonder if we should have our heads examined. However, no matter what the cost in time or effort, we are dedicated to the cause of promoting Oil Heat and will not give up under any circumstances.

"However, it is disconcerting to note how stupid our industry can be in giving our strongest competitor, natural gas, ammunition to blast us out of the heating industry. Many of our supplying companies produce and market natural gas as well as fueloil. This is all well and good except when it comes time for the company or its advertising agency to get out promotional material to sell their own particular brand of fueloil. From the wording and inference left by much of this brand advertising, the consuming public would think that there is only one brand that would heat a home without grease, grime, trouble or what have you.

"This type of promotion by the refiners can only undo what we have been trying to do in the past three years to sell fueloil on its merits as a product. Derogatory advertising only feeds the flames and gives the gas utilities an opportunity to sit back and watch fueloil destroy itself."

LAST MONTH this page had a comment on the successful selling antics of the Lp Gas industry, pointing out that this group has to be vigorous to exist at all because its members must create every new customer from scratch by selling the equipment to burn the fuel.

As a follow-up, there's a comment sent in from the Midwest stating that the Lpg marketers are starting to push full house insulation with their heating prospects. They see electric heat being made possible at high energy rates mainly because the houses are insulated like thermos bottles. Now Lpg does a "me too" and they'll probably put it across.

TOPSIDE MEN at Shell retire five years earlier than those in most companies. Both "Doc" Jordan, marketing vice-president, and Jac.: Minner, fueloil chief, have taken off just recently and the industry has reluctantly relinquished two of its most loyal fueloil partisans.

At the Fueloil Committee meeting of API in Chicago November 12, Minner's friends among the members gave him a chronometer-type watch of good vintage. This is to remind him of his former admirers when he settles into his retirement home on Martha's Vineyard island off the Massachusetts coast. Rarely has an individual worked so diligently and contributed so much to the industry he lived by.

Bob Gray

ABC Ships its Millionth Automatic Burner

With government spending in billions, a mere one million may be unimpressive. And, expressed in dollars it would be.

But counted in automatic oil burners we believe it has special significance for the manufacturers of domestic boilers, furnaces and water heaters who combine our burners—under private label—with their equipment.

Continuous and often exclusive use of ABC burners on the part of these manufacturers attests excellent engineering on the part of ABC's experienced staff; holding to critical tolerances in manufacture; painstaking assembly; and rigid quality controls through factory testing.

We are proud of our association with America's leading manufacturers of domestic heating equipment—and, on the advent of our millionth burner—renew our pledge to continue the kind of production that assures the minimum of service calls and the maximum of trouble-free customer satisfaction.

There is an ABC Burner for every domestic heating need

ABC OIL BURNERS

AUTOMATIC BURNER CORPORATION
1823 CARROLL AVENUE • CHICAGO 12, ILLINOIS

The world's largest producer of private brand oil burners selling exclusively to manufacturers of heating equipment

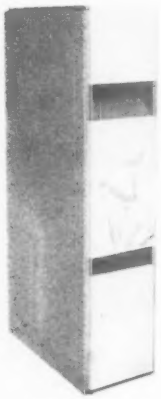
Williams

AIR-O-MATIC

SUMMER
AIR CONDITIONING
EQUIPMENT

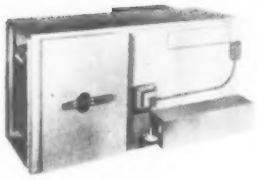
Williams GAS-O-MATIC

GAS-FIRED FURNACES

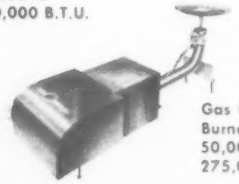


Up-Flow —
60,000 to
160,000 B.T.U.

Down-Flow —
60,000 to
160,000 B.T.U.

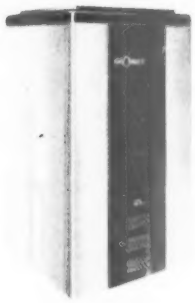


Horizontal
Flow —
80,000 to
135,000 B.T.U.



Gas Conversion
Burners —
50,000 to
275,000 B.T.U.

Basement
Models —
80,000 to
160,000 B.T.U.



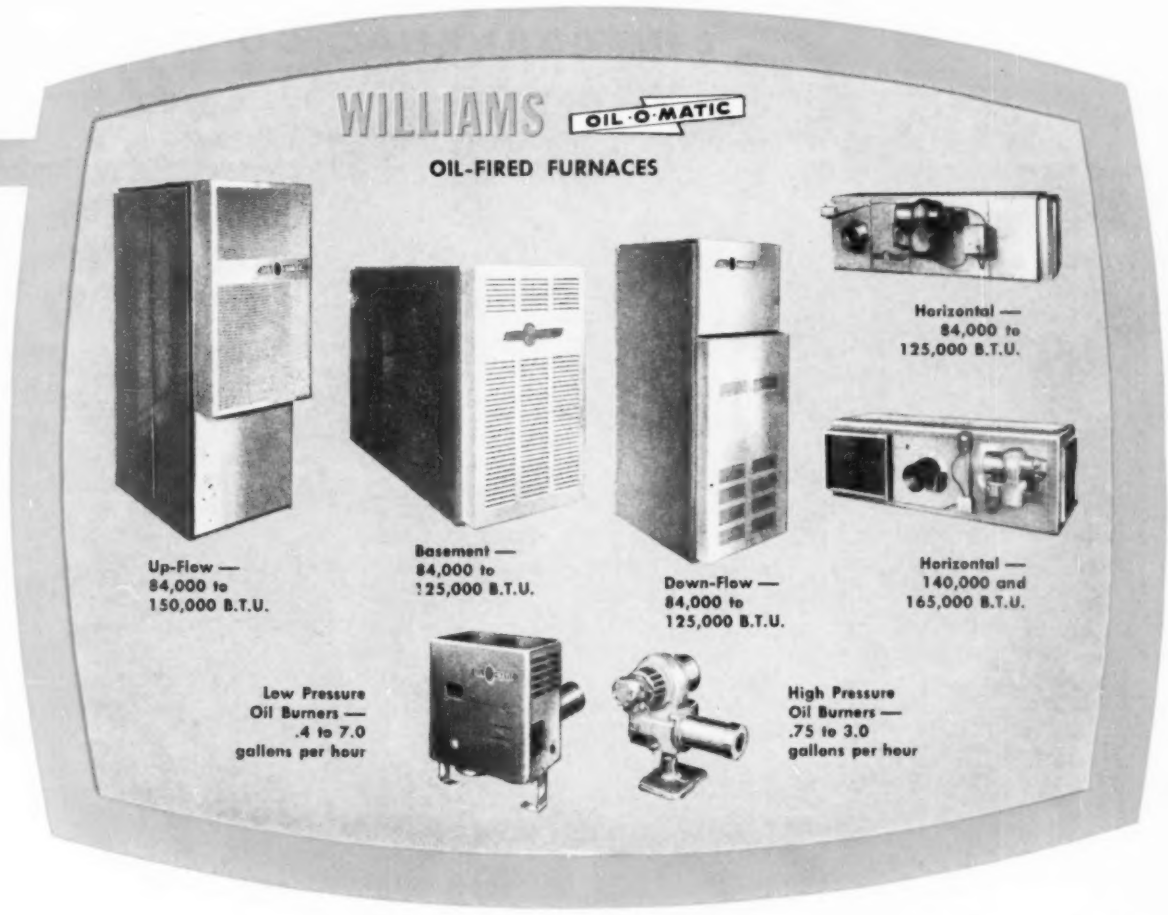
Gravity —
85,000 to
135,000 B.T.U.

BETTER FURNACES...IN SO MANY WAYS

for the heating contractor, the home builder and the home owner

WILLIAMS THE OLDEST NAME IN AUTOMATIC HEATING—

NOW HELPS YOU SELL THE FINEST IN HOME HEATING AND COOLING EQUIPMENT FOR EVERY HOME AND EVERY FUEL


WILLIAMS
OIL-O-MATIC
OIL-FIRED FURNACES
Up-Flow — 84,000 to 150,000 B.T.U.
Basement — 84,000 to 125,000 B.T.U.
Down-Flow — 84,000 to 125,000 B.T.U.
Horizontal — 84,000 to 125,000 B.T.U.
Horizontal — 140,000 and 165,000 B.T.U.
Low Pressure Oil Burners — .4 to 7.0 gallons per hour
High Pressure Oil Burners — .75 to 3.0 gallons per hour

Just as your own good reputation is your greatest asset, a name that's known and respected is the greatest single sales advantage a product can have.

That's why profit-minded heating contractors sell Williams — the quality line that's backed by the oldest name in automatic heating . . . a name known and respected by millions of homeowners.

Since Williams introduced the first practical oil burner in 1919, millions of homeowners have come to associate the name "Williams" with the finest in automatic heating. And now you can meet the needs of every homeowner . . . and every home builder . . . with Williams equipment whose performance will not only protect but enhance that fine reputation.

Oil or gas-fired furnaces — up-flow, counterflow, horizontal flow and basement models; gas conversion burners; high and low pressure oil burners; and air-cooled summer air conditioners specifically designed to work with each furnace.

Fine equipment. A complete line. A great name. It's a winning combination. If you want to be a winner, ask us for the whole story.

For prices and details on the complete Williams line of home heating and cooling equipment, write to:

WILLIAMS
HOME HEATING AND COOLING UNITS

OIL-O-MATIC
GAS-O-MATIC
AIR-O-MATIC

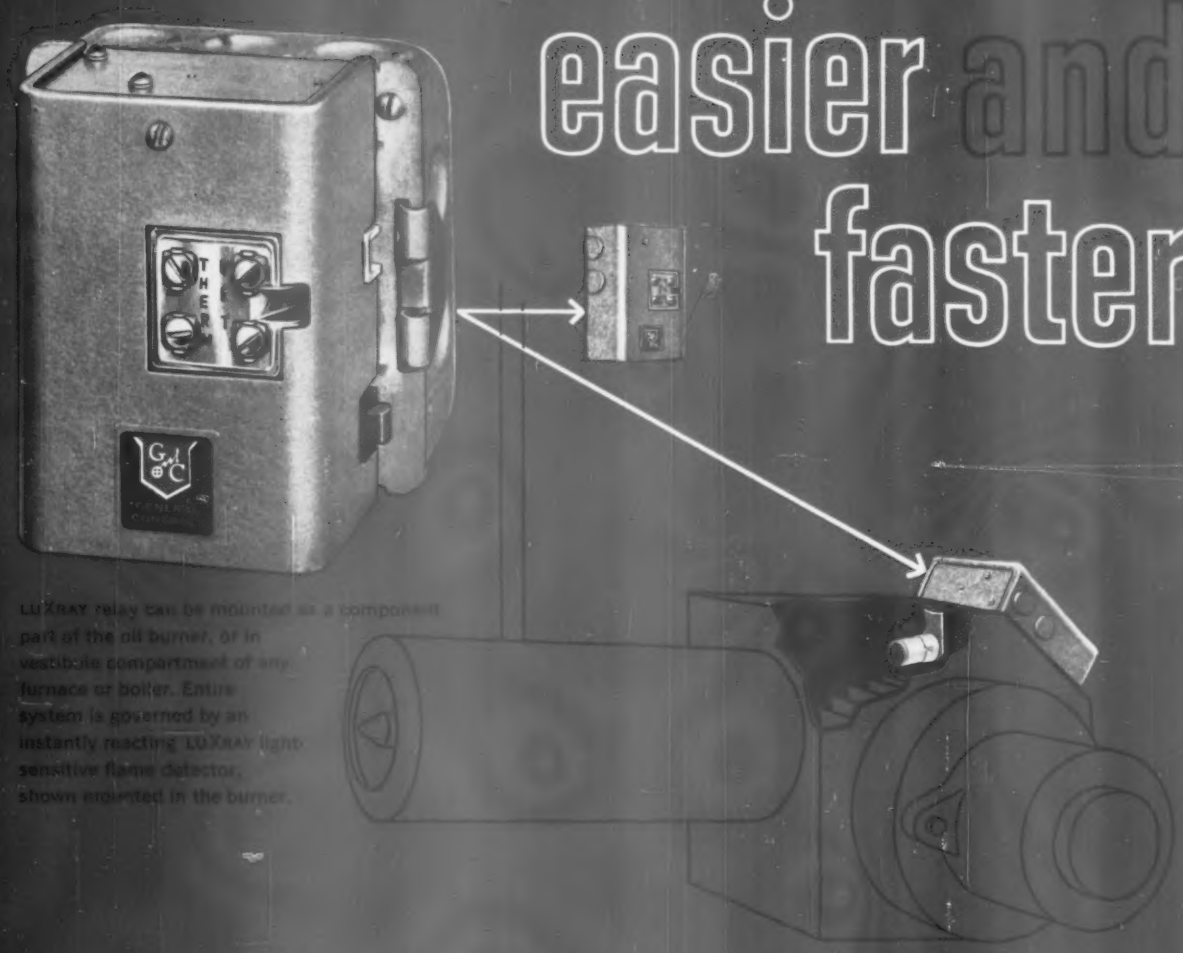
WILLIAMS OIL-O-MATIC HEATING CO., COLUMBUS 12, OHIO
A Division of National Union Electric Corporation

NEW from General Controls—a LuXray primary that fits any standard 4" x 4" outlet box! The General Controls LuXray system requires no special mounting brackets for installation. The control fits all standard 4-inch square outlet boxes and offers these advantages: • Self-contained control with wrap-around steel cover leaves outlet box free for wiring. • Clear plastic shield protects control for coverless mounting application. • Constant ignition—low or line voltage models, intermittent ignition—low voltage model only. • All-metal hinge available. • Fully stocked local warehouses will give your order prompt attention and 44 Factory Branch Offices offer field service on request. Look for your nearest General Controls Factory Branch Office or Authorized Wholesaler in the Yellow Pages of your local directory.

GENERAL CONTROLS
Automatic Controls for Product or Process
Glendale, Calif. • Skokie, Ill. • Guelph, Ontario, Canada
Nine Plants—44 Factory Branch Offices Serving
The United States, Canada and Western Europe

compact oil burner primary control system

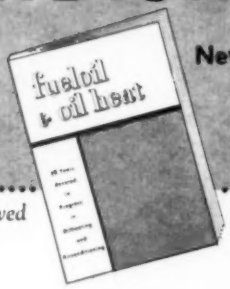
makes installation easier and faster



LUXRAY relay can be mounted as a component part of the oil burner, or in vestibule compartment of any furnace or boiler. Entire system is governed by an instantly reacting LUXRAY light-sensitive flame detector, shown mounted in the burner.

Oilheating & Airconditioning
MERCHANDISING NEWS

2 West 45th Street New York 36, N. Y.



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Monthly Oilheating Trends

OCTOBER INSTALLATIONS of domestic oilheating equipment are estimated at 54,464 burners and units, a drop of 4% below last year's 56,683. For the ten months to the end of October, total installations were approximately 403,846 which is 2% below last year's 413,669.

The October installations were divided: New homes, 15,032; replacements of old oilheating, 26,415; and conversion from other fuels, 13,017. For the full ten months: New homes were 107,769 against last year's 127,170. Replacements of old oilheating in the ten months come to 201,888 vs. 159,036. Conversions from other fuels totalling 94,189 were sharply down from 127,463 in the same period of 1960.

There are indications from some leading manufacturers of components that they are having a better year than our figures would indicate. So there may finally be some upward adjustment when everything is officially recorded.

Oilheating dealers in October sold approximately 2,531 central airconditioning units. They also sold 1,884 power burner water heaters.

There is considerable clamor among dealers for a simple oil-powered airconditioning unit much lower in cost than anything now available. The gas people are making considerable headway with the units using their fuel. Thus far, the oil men have been installing electric airconditioning simply to complete some of their own comfort jobs.

Oilheating Stocks: Dealers at the end of October had in their warehouses an estimated 51,049 domestic oilburners and units. This compares with 51,342 a month earlier, and with 53,968 at that time in 1960.

These stock levels are relatively better than we had been seeing through much of this year, and shows some evidence of dealer confidence.

The October 31 stocks were divided: separate burners, 18,888; boiler-burner units, 10,720 and furnace-burners, 21,441.

Tank Stocks: Dealers had on hand at the end of October approximately 37,093 customer oil tanks.

The present tank stocks compare with 41,552 last month and with 36,114 a year earlier.

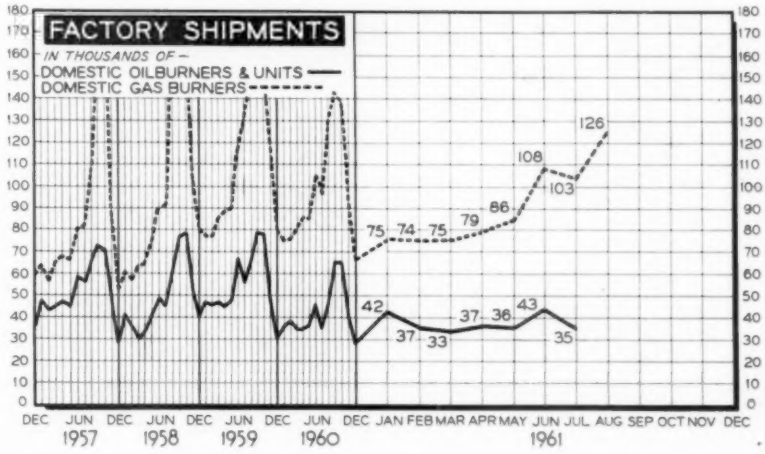
The current tank stocks were divided: 220 to 330 gal. size, 33,031; sizes 550 to 675 gal. 2,767 and sizes 1000 gal. or larger, 1,295.

October Minimum Retail Prices Key Dealers

	Oct. Avg.	*Sept. Avg.*
Separate Burners	$316	$313
Boiler Burners	752	746
Furnace Burners	615	610

Price Index: Separate Burners 1947-49 is 100%

WHOLESALE			
October	97.8	Six months ago	95.8
September	96.2	Year ago	94.5
RETAIL			
October	91.8	Six months ago	91.9
September	91.6	Year ago	90.8

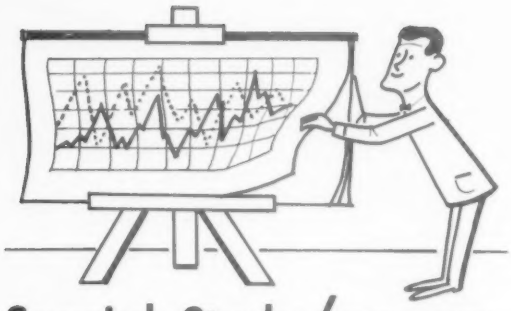

FACTORY SHIPMENTS
IN THOUSANDS OF –
DOMESTIC OILBURNERS & UNITS
DOMESTIC GAS BURNERS
75 74 75 79 86 108 126
42 37 33 37 36 43 35
103
DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1957 1958 1959 1960 1961

Shipments of Oilburners and Units

(INCLUDING EXPORTS)

Adjusted to include manufacturers other than those reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	AUGUST			EIGHT MONTHS		
	1961	*1960*	*Percent Change*	*1961*	*1960*	*Percent Change*
Separate Burners	43,680	28,054	+55.7	218,197	210,814	+ 3.5
Boiler Burners	5,292	4,802	+10.2	25,477	24,969	+ 2.0
Furnace Burners	13,242	12,844	+ 3.1	81,936	67,502	+21.4
All Domestic	62,214	45,700	+36.1	325,610	303,285	+ 7.4
Commercial	3,667	3,315	+10.6	24,260	24,638	− 1.5
Total	65,881	49,015	+34.4	349,870	327,923	+ 6.7



Special Study/ THIS MONTH

What are the income Levels for non-operating Employees

AT LEAST once each year, we have been making a study of wage rates for service and installation men and for truck drivers delivering oil. However, we occasionally get inquiries about wage rates of other employees of the fueloil and oilheating company.

The special study this month takes a look at the income and other working conditions of 12 types of employees other than servicemen and oil drivers. In the large table we show the averages that have resulted from the study. Naturally, in an undertaking of this sort there would be quite a swing between the high and low points, but in quoting only the average figures we believe they will be more useful.

We show not only a geographic separation, but also the differences by sizes of cities. A large city, we consider to be one with 250,000 or more population, a small city is anything up 25,000, and of course the medium city is anything in between.

With a little figuring it is possible to arrive at a suitable figure for the individual dealer. First, make a comparison between your geographic area and the line that includes all sections. Then you can apply that ratio to your city size.

As an example, a switchboard operator in New England at a $60 average is 9.1% lower than the $66 average for all sections. Then drop down to city sizes and reduce the figures shown by 9.1% to arrive at the typical wage for your situation.

Again, referring to New England if you are in a medium city you would deduct 9.1% from the $66 shown in the table and you'd be back to the $60 regional average. For a small New England city, the typical pay for the switchboard girl would be 9.1% less than the $59 figure shown or just under $54.

If you are located in the Pacific Northwest, your rates are higher than the all-sections average on most of the items so you would have to correspondingly raise the averages by city sizes.

As an example, the Pacific Northwest service manager at $152 is 15% above the all-section average so you would apply that 15% increase to the city sizes for that area.

After getting the weekly wage rates on the 12 occupations we asked what are the basic hours normally used for such employees. There was not much variation between the sections. On five of the occupations, the averages were pretty close to 40 hours, some slightly above and others slightly below. These five occupations are bookkeeper (manual and machine), secretary, switchboard, and general clerical.

Then we found that the average degree-day clerk and the stockroom man work 42 hours. The next group with an average of approximately 44 hours includes the sales manager, the chief dispatcher, and the operations manager. Finally, there were two occupations that averaged just above 45 hours . . . the service manager and the bulkplant operator.

We asked the dealers how many paid holidays they allowed to these non-operating employees. The answers ranged all the way from five to 12, but the national average is seven.

Then we asked if they pay overtime to these employees beyond the normal hours they had listed. In the national total, 54% pay overtime, but there are wide variations in sectional habits. In New England, 75% pay overtime; in the Mid-Atlantic area, it is 68%; in the Midwest, 26% and in the Pacific Northwest, 29%.

When it comes to paid vacations we again found considerable differences based on geography. In New England, 69% of the companies give one week after the first year, and 31% give two weeks; after two years 77% of the companies allowed two weeks of paid vacation; and after five years all of the companies give two weeks paid; and then when they get to ten years, one-fifth of the companies give three weeks paid.

In the Mid-Atlantic area, a one-year employee is given one week's paid vacation by 61% of the dealers, an-

Wages Paid To Employees

BY GEOGRAPHY

	Bookkeepers Manual	*Machine*	*Secretary*	*Switchboard*	*Gen. Clerical*	*Sales Mgr.*	*Chief Dispatcher*	*D.D. Clerk*	*Service Mgr.*	*Opera. Mgr.*	*Bulkplant Operator*	*Stockroom Man*
New England	$86	$66	$65	$60	$64	$143	$104	$78	$139	$150	$ 84	$88
Mid-S-Atlantic	89	76	88	69	70	149	118	85	136	155	105	85
Midwest	76	67	75	64	69	148	110	77	115	139	81	65
Pacific N.W.	79	76	88	69	73	168	126	94	152	.....	.....	.....
All Sections	$84	$72	$80	$66	$69	$149	$114	$83	$132	$149	$ 94	$79

BY CITY SIZES

Large cities	$89	$76	$90	$67	$69	$166	$116	$80	$146	$154	$ 94	$87
Medium cities	84	65	70	66	65	138	111	87	116	154	88	73
Small cities	73	61	50	59	58	98		74	123	96	59	66

other 26% give them two weeks after the first year, while 13% give them no paid vacation. Then 69% of the dealers give two-year employees two weeks with pay, most of the balance, one week. After five years 4% of the companies give three weeks, and 86% of them give two weeks with pay. Following ten years, 35% of the companies allow three weeks, the balance, two weeks.

The Midwest sees 58% of the companies giving one week after the first year, 21% giving them two weeks. After the second year, we find 68% of the companies give two weeks and the balance either one week or none. After five years we find 79% giving two weeks, and 11% giving three weeks. After ten years, 5% give a full month, 26% give three weeks, and the balance give two weeks.

For the Pacific Northwest, the number of participating dealers was limited so the figures are not too solid—just about half give two weeks after a year, and the others give one week. After two years, we find 67% giving two weeks vacation and after five years they all give it. At the ten year point, just under a third of the companies give employees three weeks and the balance two weeks.

The next question had to do with paid sick leave. A lot of the dealers have no policy on this, but among those that do here are the sectional averages. New England, 16 days; Mid-Atlantic, 13 days; Midwest, 7 days; and Pacific Northwest, 15 days.

Pension Plans

On the question of pension plans, 28% of the companies have them as a national average; we next find that 20% of the companies have profit sharing and 31% of the companies have some other type of bonus plan. Naturally, some companies had more than one of these benefit plans, but we find that 71% have at least one of the three benefits in effect. Only 29% have none of the three. We did not ask anything on the nature of these plans, but we'll try that at some later date. The dealers did volunteer some comments, however.

"We pay a bonus based on $25 per year of service." . . . "We are a small company and do most of the work except driving; our only other outside employee is our sales manager." . . . "Our bonus is $5 per month of service up to $100 paid at Christmas." . . . "We give two weeks salary as a bonus, more to key employees." . . .

"Pension or bonus plans have never worked for us." . . . "We give a 1% incentive on sales." . . . "We are working on a profit sharing plan for next year." . . . "We balance our work load by keeping our female help on a 35-hour week; our men on a 48-hour week during the winter which is reduced to 40 hours during the summer." . . .

"We have a modified winter personnel plan and also a summer plan. We pay all pension, hospitalization, and insurance coverage plus disability provisions — in effect no payroll deductions." . . . "We have a sickness and life policy on all employees; the dispatcher and operations manager are insured for $15,000 additional — all premiums are paid by the company."

"We do a million gallons of business with two combination service and oil truck drivers plus a bookkeeper and myself doing a little of everything."

Oilburner Permits*

October 1961		*Ten Months 1961*	*1960*
1	Albany, N.Y.	16	17
31	Baltimore, Md.	183	209
73	Bridgeport, Conn.	417	509
2	Columbus, Ohio	21	13
32	Detroit, Mich	289	217
49	Elizabeth, N.J.		295
17	Freeport, N.Y.	89	127
35	Hartford, Conn.	405	344
32	Irvington, N.J.	144	131
36	Meriden, Conn.	208	244
17	Milwaukee, Wis.	140	186
13	Minneapolis, Minn.	99	125
21	Montclair, N.J.	110	83
5	Morristown, N.J.	19	21
33	Mt. Vernon, N.Y.	221	266
122	Newark, N.J.	554	563
33	New Bedford, Mass.	313	474
	New Haven, Conn.		131
13	New Rochelle, N.Y.	49	76
69	Norfolk, Va.	528	227
	Omaha, Neb.		33
8	Orange, N.J.	50	56
6	Passaic, N.J.	49	42
31	Paterson, N.J.	203	175
	Philadelphia, Pa.**		978
96	Portland, Me.	437	437
110	Portland, Ore.	767	888
13	Poughkeepsie, N.Y.	71	100
105	Providence, R.I.	411	302
108	Richmond, Va.	626	598
50	Roanoke, Va.	305	390
55	Rochester, N.Y.	304	339
13	Rockville Centre, N.Y.	39	33
51	Salem, Mass.	258	281
18	St. Louis, Mo.	154	381
9	St. Paul, Minn.	56	53
0	Schenectady, N.Y.	27	41
38	Spokane, Wash.	313	362
124	Springfield, Mass.	671	669
7	Stamford, Conn.	68	75
65	Washington, D.C.	309	351
9	White Plains, N.Y.	73	90
9	Wilmington, Dela.	88	166
104	Worcester, Mass.	547	604
0	Yonkers, N.Y.	93	95
	Matched Totals	9,724	10,360
	Percent change	−6.1	

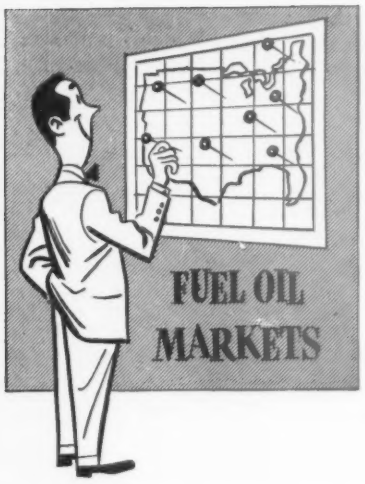
*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.
**Courtesy of "Philadelphia Inquirer."

Where is the

New Home Market?

	No. of Permits issued August 1961	*8 months*
Alabama	1,154	7,974
Arizona	1,860	13,354
Arkansas	295	2,341
California	18,613	139,276
Colorado	2,193	14,487
Connecticut	1,904	10,386
Delaware	341	1,507
Dist. of Columbia	40	1,940
Florida	5,337	42,276
Georgia	1,875	13,753
Idaho	135	943
Illinois	4,453	33,678
Indiana	1,524	10,832
Iowa	608	3,889
Kansas	495	4,367
Kentucky	636	4,858
Louisiana	1,161	7,122
Maine	172	984
Maryland	3,069	18,751
Massachusetts	2,223	14,596
Michigan	2,753	18,412
Minnesota	1,006	8,335
Mississippi	512	3,355
Missouri	1,847	13,120
Montana	140	1,129
Nebraska	966	5,231
Nevada	836	4,677
New Hampshire	261	1,097
New Jersey	2,894	21,166
New Mexico	403	2,809
New York	15,331	65,697
North Carolina	1,278	9,174
North Dakota	152	1,078
Ohio	4,725	27,292
Oklahoma	870	6,174
Oregon	843	6,076
Pennsylvania	2,400	19,342
Rhode Island	241	2,002
South Carolina	274	2,253
South Dakota	177	1,119
Tennessee	1,187	9,511
Texas	6,449	41,472
Utah	657	4,550
Vermont	31	190
Virginia	2,929	19,811
Washington	1,657	11,001
West Virginia	146	867
Wisconsin	1,369	9,501
Wyoming	121	733

These figures are collected by the Census Bureau from selected areas. They represent approximately 77% of all dwelling construction in the United States.



THE HEATING SEASON through October has been very warm and fueloil distributors found themselves hard put to keep their organizations very active. The weighted average of the East Coast to October 31 shows degree-days 29.3% fewer than normal, and 26.4% under last year.

The Midwest had 9.2% fewer than normal degree-days to that date, but 2.2% more than a year ago. For the entire area East of the Rockies, degree-days through October were down 22.9% from normal and down 17.2% from a year ago.

Getting into November, the situation was beginning to correct itself, but at mid-month it was still a very warm season. The primary stocks East of the Rockies were very nearly the same as on the corresponding date a year ago, and this was true in each of the three principal divisions of that area.

Refiners on the whole have been trying to hold back on the distillate output to avoid the surplus conditions which hurt the market, but the mild season has virtually nullified the averages of such a policy up to now.

Price changes between October 10 and November 10 were very few in the cities represented in the table.

Distillate Fueloils

PRIMARY STOCKS*
(Thousands of Barrels)
East of Rockies

	Nov. 10 1961	*Nov. 11 1962*
East Coast	77,694	76,010
Midwest	55,620	56,959
Gulf Coast	29,223	28,892
Total	162,537	161,861

*American Petroleum Institute

No. 2 Heating Oil (Including No. 3 & PS200)

Price per gallon as of Nov. 10

	Tank Car†	*Tank Wagon*
Portland, Me.	11.0A	15.9
Boston	10.9A	15.9
Providence	10.9A	15.4
Hartford	11.15A	16.3
New Haven	10.8A	15.9
Syracuse	11.6A	15.9
Albany	11.0A	15.5
New York	10.8A	15.2
Newark	10.8A	15.2
Philadelphia	10.8A	15.2
Baltimore	10.8A	15.4
Wilmington, N.C.	11.2A	14.9
Washington	10.8A	15.7
Richmond	11.15A	14.8
Charleston, S.C.	11.2A	14.9
Chicago	9.75*	14.1
Detroit	10.5*	15.1
Cleveland	12.3*	15.5
Minneapolis	9.929	15.2
St. Louis	9.35*	14.8
Indianapolis	9.89*	14.7
Milwaukee	9.85*	14.6
Des Moines	9.40*	15.3
San Francisco	12.05*	14.8
Portland, Ore.	10.825*	15.1
Seattle	10.6*	15.2
Spokane	12.45	16.8
Los Angeles	11.55*	14.3

Tank wagon prices shown are for maximum one-time delivery discounts.

*delivered

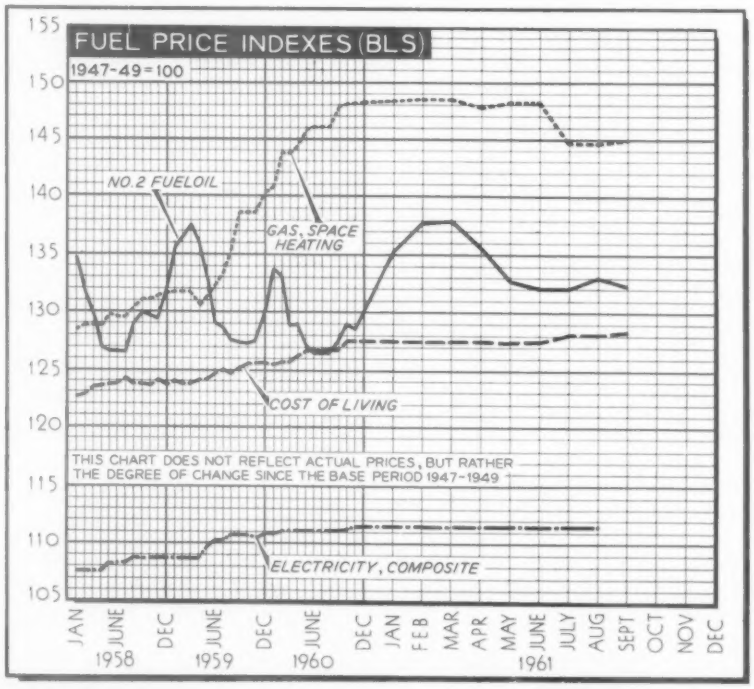
A—Prices subject to .50¢ TVA

†Tank car prices are typically those paid by fueloil distributors as a purchase price. On the West Coast, this term more often indicates a retail sale to a large commercial account. This usually is a half cent below tank wagon price.

Degree Day Table

	—SEASON TO DATE— Sept. 1-Oct. 31		
	Norm.	*1961*	*Percent Change**
Albany AP	582	414	— 28.9
Atlanta AP	118	162	+ 37.3
Baltimore AP	236	183	— 22.5
Boston AP	392	297	— 24.2
Buffalo AP	555	399	— 28.1
Charlotte, N.C. AP	154	141	— 8.5
Chicago AP	440	370	— 15.9
Cincinnati CO	264	265	
Cleveland AP	415	332	— 20.0
Dallas AP	53	50	— 5.7
Denver AP	545	732	+ 34.3
Des Moines AP	454	478	+ 5.3
Detroit AP	477	340	— 28.7
Grand Rapids AP	606	463	— 23.6
Hartford AP	485	400	— 17.5
Helena AP	937	1135	+ 20.8
Houston AP	7	16	—128.5
Indianapolis AP	385	336	— 12.7
Kansas City AP	284	296	+ 4.2
Los Angeles CO	58	34	— 41.4
Louisville AP	283	262	— 7.4
Milwaukee AP	562	556	— 1.1
Minneapolis AP	616	635	+ 3.1
New Orleans CO	5	11	+120.0
New York CO	281	188	— 33.1
Omaha AP	419	457	+ 9.1
Philadelphia CO	219	177	— 19.2
Pittsburgh CO	354	271	— 23.4
Portland, Me. AP	714	537	— 24.8
Portland, Ore. CO	365	428	+ 17.3
Providence AP	488	333	— 31.8
Roanoke, Va. AP	283	248	— 12.4
St. Louis AP	278	263	— 5.4
Salt Lake City AP	469	668	+ 42.4
San Francisco CO	238	246	+ 3.4
Sault Ste. Marie AP	937	746	— 20.4
Seattle CO	463	499	+ 6.4
Toledo AP	489	431	— 11.8
Washington AP	274	197	— 28.1

*Compared with normal



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TENNECO . . . SIGNPOST FOR THE SIXTIES

By James M. Collins

WASHINGTON — The Interior Department has urged the White House to change the plan for controlling crude oil imports into the area East of the Rockies, and to cut the total by about 50,000 barrels daily — but virtually every other executive department is opposed to the idea.

The State, Defense and Commerce agencies, for example, are against reducing imports of crude oil in Districts I-IV — and they also oppose the idea of trying to impose a ceiling on crude imports from Canada — which has been exempt from restrictions under the control program up to date.

Specifically, Interior proposed in a new draft proclamation that President Kennedy change the crude control formula so that imports of crude East of the Rockies would be held, starting January 1st, to 10.25% of the "use" of domestic crude oil by the refiners in the area during the year which ended on Sept. 30, 1961.

Interior believes that the trend in oil exploratory and development activities is cause for serious concern. Well drilling, except for an upturn in recent weeks, has been disappointingly depressed and addition of crude oil reserves did not keep pace with production of crude last year. Besides, crude prices and product prices have tended downward in recent months.

But, Venezuela has formally protested in a note to the U.S. against any reduction in crude imports, which would naturally fall most heavily on Venezuela, which is the supply source for two-thirds of imports of crude on the East Coast.

In a note to the State Department, it was pointed out that compared with a constant 4.6% to 4.8% share of the U.S. market that Venezuela has enjoyed for several years, the flow during the first six months of this year dropped substantially.

Residual Fight Grows

Meanwhile, the battle over controls on imports of residual fuel oil is growing in intensity. Some major oil companies along the East Coast with large foreign supplies of residual, and consumer interests in the New England area particularly, are now going all out to press for elimination of the restrictions on residual imports.

The Office of Emergency Planning, which has been studying this issue for almost a year, has been instructed by the White House to speed up its report and recommendations. An early decision by the President seems to be in the offing on this, as well as crude oil imports.

Arrayed on the other side are domestic oil producers and the coal industry, both fighting to have residual controls retained. Some agencies, including State and Defense, do not support residual controls — but the Interior Department insists to the White House that there is a relationship between such imports and the domestic oil industry and that controls should be retained just as long as they are kept on crude imports.

Stakes Are Large

The stakes involved in the fight over residual import controls are very large. Right now large new plants are coming into operation, or are planned, along the East Coast that will consume residual, coal or natural gas. If residual controls should be maintained, these new consumers will use coal or gas. If not, they probably will use residual imported from the Caribbean.

Involved over the next five years or so is the energy equivalent of 75,000,000 tons of coal. Decision by the White House will be the most important factor in setting the future pattern of energy use along the East Coast.

JFK May Keep Controls

Expectations here, however, are that the President will decide to maintain controls on residual imports, for the time being at least. But a top-to-bottom review may be made to see if the restrictions should be lifted. Another cabinet committee like the one established by President Eisenhower may be set up to look into the whole problem of oil imports and domestic energy matters.

FPC Appeals to Producers

Meanwhile, the Federal Power Commission, under the leadership of its new chairman, Joseph Swidler, is urging gas producers to try to work out the problem of gas prices with the FPC on a cooperative basis.

Hearings to set an area-price ceiling for gas produced in the huge Permian Basin are now underway. FPC does not want to set the price on the basis of individual costs of producers, but rather on overall industry cost, price, operating, trends. But, this problem won't be settled for months. One Commissioner predicts it will be two years before the area-price policy is finally resolved and it is known whether it works, and whether it is legal.

'Mr. Oil' Comes to Washington

The American Petroleum Institute has just hired Congressman Frank Ikard (D., Texas) to be its executive vice president, stationed in Washington. Ikard, highly respected by his colleagues in the House, is young and vigorous, well grounded in problems facing the petroleum industry. He will take over active duties on Dec. 15, date of his resignation from Congress. Ikard will not be able to give an "industry" answer to all the oil problems which arise in Washington — there are too many conflicting views within the Industry on a number of issues. But, he will be available to the press and ready with reactions when oil issues arise. His main job will be to create a better image of the industry.

FTC Probes Oil Markets

The Federal Trade Commission, now headed by the former counsel of the Senate antitrust (Kefauver) subcommittee, is reported to be probing into oil markets, with emphasis on gasoline price-cutting. FTC investigators have been asking questions in various areas of the country. Their findings could lead to a big over-all investigation by the FTC, and ultimate recommendations to Congress.

"The night calls we get through the Yellow Pages mean big business for us!" says Bill Roderick, American Oil Co., Salt Lake City, Utah. "Our display ad lists a phone number for people to call nights and holidays. And let me tell you, it's a mighty busy number! People call and say they found us through the Yellow Pages. We run a big ad so prospects will see it first and call us first. We've gotten some very good, steady accounts through the Yellow Pages, and wouldn't want to be without it for the world!"

Display this emblem. It builds your business!

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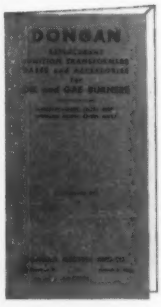

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Names in the News

Joseph A. Lattner, chairman of the board, Century Engineering Corp., Cedar Rapids, Ia., died recently at the age of 88. He was a dominant figure in the early days of the domestic oilburner. In 1923, the Lattner oilburner was developed and distributed by the P. M. Lattner Mfg. Co. In 1926, he and his son organized Century Engineering Corp. He was one of the early sponsors of the American Oil Burner Association and served both the AMA and the Oil Heat Institute on various boards and committees.

Thomas C. Sutton has been elected a director and vice president of Dover Corp. He is president and general manager of the company's OPW Division, Cincinnati, O., which was merged into Dover Corp. in February.

J. H. Swallow has been promoted to distributor sales manager, Bryant Manufacturing Co., Indianapolis, Ind. He was formerly assistant to the general sales manager and has had more than 25 years experience in the sale of heating and cooling equipment.

Spurgeon K. Britt has been named coordinator of advertising and *Thomas W. Wilson* appointed coordinator of sales promotion, Humble Oil & Refining Co., Houston. They will serve as principal aides to Robert M. Gray, manager of advertising and sales promotion.

Wilfred H. Wales has been promoted to general sales manager, Taco Heaters, Inc., Cranston, R.I. Wales previously was Taco's Field Sales Administrator. The company also announced the appointment of *Paul R. Friend* as manager of finance. Friend was formerly with Goodyear.

Robert L. Borchardt has been appointed National Service Manager, Motorola Communications and Electronics, Inc., Chicago, Ill. In this capacity, Borchardt will coordinate the firm's nationwide communications service activities, and will direct Motorola's national communications service training program and the Motorola Training Institute, which provides home study on two-way radio servicing techniques.

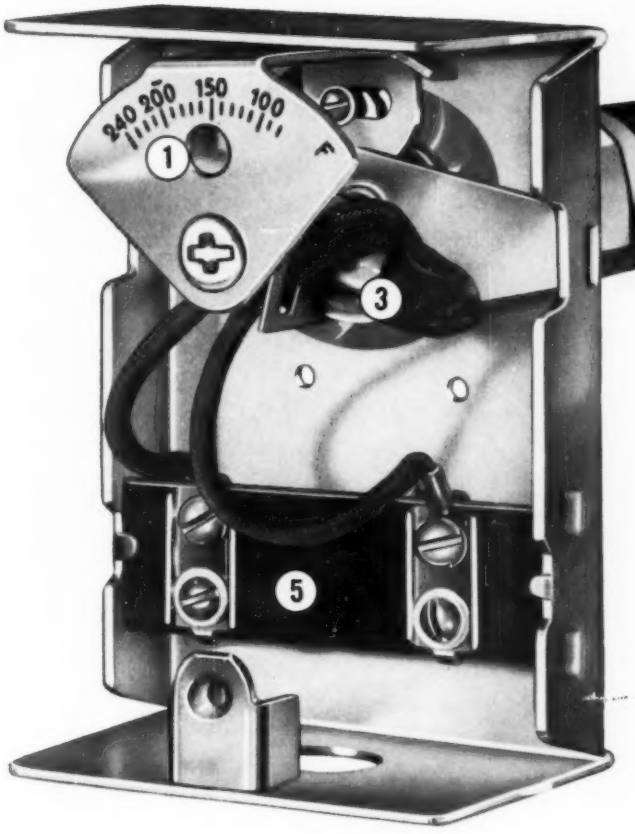
Lyttleton Price, Jr. has been promoted to vice president, research and development, Rheem Manufacturing Co.'s Home Products Group, Chicago, Ill. Price joined Rheem in 1940 and held various positions in product development until his appointment in 1954 as manager of research and development, Home Products Group.

Donald B. Gordon has been appointed advertising and sales promotion manager, Radiant-Ray Radiation, Inc., Newington, Conn. In his new position, Gordon will be responsible for all sales promotion and advertising. The company also announced the addition of several manufacturer's representatives. They are: *Penningroth Engineering Co.,* Fort Wayne, Ind.; *John L. Alexander,* Grand Rapids, Mich.; *Vikimatic, Inc.,* Cleveland, Ohio; and the *De-Wal Hydronics Corp.,* Racine, Wisc.

William F. Martin has been elected president, Tube Reducing Corp., Wallington, N.J. Before joining Tube Reducing, Martin had been affiliated with Borg-Warner Corp., serving most recently as vice president and assistant general manager for the company's Mechanics Universal Joint Division in Rockford, Ill.

John C. Quilty has been elected vice president, personnel and industrial relations, Shell Oil Co., succeeding *E. H. Walker,* retiring. Quilty joined Shell in 1934 as an attorney, joining the personnel department in 1943. He was made general manager of personnel and industrial relations last March.

New! For Oil-fired Water Heaters



1. Front temperature scale—easy to read and set.
2. New fast response bimetal.
3. Accurate SPST switching, dependable trouble-free mercury switch.
4. Special plastic sleeve protects well against electrolytic action.
5. Wide terminal block for wiring ease.

Honeywell's newly redesigned L444A Aquastat*

Here is the new standard in operating controllers for oil-fired water heaters.

The new Honeywell L444A with bimetal element senses temperature changes more quickly—helps maintain precise water temperatures.

New bimetal and well provide faster response and an extended 2½" shank allows for insulation requirements. Special corrosion-resistant plastic covering protects bimetal element.

Specify Honeywell's new L444A Aquastat on your next water heater order. Ask your wholesaler for new catalog or write Honeywell, Dept. FH-12, Minneapolis 8, Minn.

Honeywell

H HONEYWELL First in Control

HONEYWELL INTERNATIONAL—*Sales and service offices in all principal cities of the free world. Manufacturing in the United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.*

**Trademark*

BOSTON-APTHORP has EVERYTHING YOU EXPECT of an OIL BURNER NOZZLE!

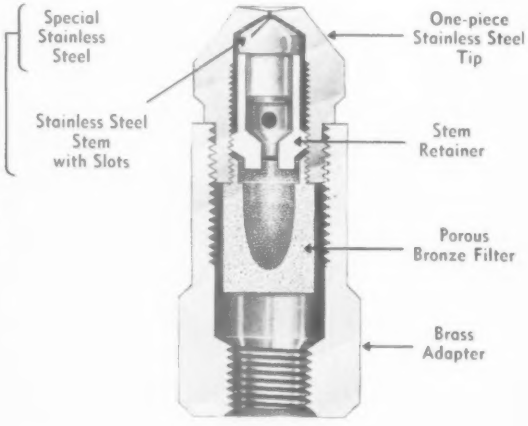
1. Complete and perfect atomization.
2. Individually tested, BOSTON-APTHORP Nozzles deliver the correct gallonage, angle and type of spray, as marked.
3. Nozzle tip made of one-piece stainless steel, resulting in: (a) Uniform expansion and contraction. (b) Less heat conducted to the inside of nozzle than with brass, thus eliminating varnish build-up on inside vital parts. (c) Long life because stainless steel is tougher.
4. Fractional gallon sizes furnished standard with porous bronze filter.
5. Available in hollow and solid spray and standard angles of spray 30°, 45°, 60°, 70°, 80°, and 90°.

HOLLOW SPRAY

The hollow spray nozzle is designed for burners delivering a hollow air pattern. All of the atomized spray is delivered to the outside of the cone of spray.

SOLID SPRAY

The solid spray nozzle is designed for burners delivering a solid air pattern. The atomized oil is delivered equally throughout the entire cone of spray.



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For details write to:

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Div.
7-17 WILLOW STREET
LYNN, MASSACHUSETTS

. . . Names in the News

C. D. (Chet) Lyford, 64, retired Minneapolis-Honeywell executive, died November 1 in Minneapolis. He was a vice president of Honeywell from 1945 until 1956. Lyford had been associated with the home heating industry since 1919 when he joined Minneapolis Heat Regulator Co., one of the predecessor firms of the present Honeywell corporation. He sold door-to-door the original "damper flapper." He was assistant sales manager from 1924 until 1935, and sales manager of the gas controls division until 1945.

Samuel E. Lane has been named director, sales, Greater New York Area, Air-X Industries, Inc., New York, N.Y. Lane, a 30 year veteran in the heating and cooling industry, comes to Air-X from Atherm, Inc. The company also announced the appointment of *Charles Hewitt* as sales manager, Residential Heating Division.

Roy C. Ingersoll, who has witnessed the progress of U.S. industry from the era of ox carts to the jet age, will retire as chairman of the board of Borg-Warner Corp., Chicago, Ill. *Robert S. Ingersoll,* president since 1956, has been elected chairman of the board and chief executive officer, with *Lester G. Porter,* now executive vice president, succeeding Ingersoll as president. The senior Ingersoll was named to the newly-created position of honorary chairman and will also continue as a director.

John J. Buckley, right, vice president of American Mineral Spirits Co., Murray Hill, N.J., was recently honored for completing 25 years of service. A. W. Vallentyne, chairman, congratulates him. Buckley is in charge of fueloil sales.

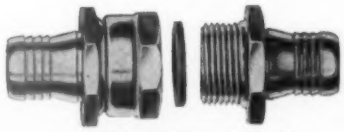
for safe, economical transfer of petroleum products specify

SCOVILL

COUPLINGS — PERMANENT OR REATTACHABLE

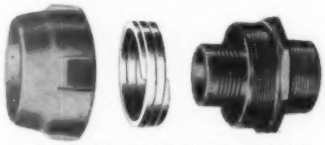
From Scovill you can now get the industry's most complete line of permanent and reattachable couplings for fuel oil and gas pump hose. Ruggedly made in a wide range of sizes to both commercial and military specifications, all Scovill Couplings give long, safe, trouble-free service.
Besides petroleum products, Scovill Couplings can be used in the transfer of many other types of liquids and on rubber, synthetic, and reinforced hose. If you have any applications for which you are in doubt about correct coupling usage, write us—our engineers will be glad to assist you. Scovill Manufacturing Company, Industrial Couplings, Waterbury 20, Connecticut.

FUEL OIL COUPLINGS



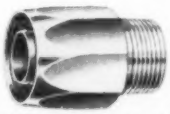
520-H Permanent. ¾" to 4"

Dubl-Grip Reattachable. 1" to 1½"



Super-Grip Reattachable. 1" to 4"

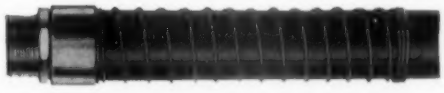
GAS PUMP COUPLINGS



570-H Permanent. ⅝", ¾", 1"

Dubl-Grip Reattachable. ¾" and 1"

SPRING GUARDS



External Guard for Fuel Oil Coupling. ¾" to 3"

Internal (illustrated) and External Guards for Gas Pump Couplings. ¾" and 1"

Complete equipment for attaching by machine or hand is available

Hose Couplings by

SCOVILL

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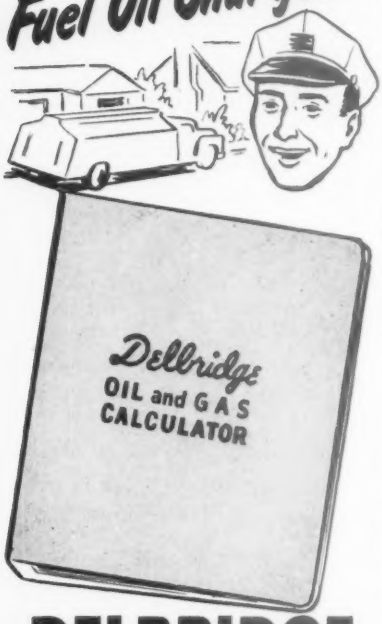
2SH61

Fastest, Easiest Way to Figure Fuel Oil Charges!



DELBRIDGE
Oil & Gas Calculator

Stop figuring fuel oil charges the old-fashioned, long-hand way! No more errors—no more dissatisfied customers!

Figure fuel oil charges fast—easily—accurately—with the DELBRIDGE Oil & Gas Calculator! Total amount of sale is *pre-calculated* for you without laborious long-hand figuring and errors—simple as finding a phone number!

Covers prices from 10c to 40c per gallon by steps of 1/10¢. Shows gallonage from 1 to 250 gallons by steps of 1 gallon—then to 5,000 gallons in easy steps.

Durable, long-lasting leatherette metal-ring binder. Only 5¼" x 6½"—fits easily in coat pocket. Guaranteed accurate by Lloyd's of London. Only $5.00 each.

Try the DELBRIDGE Oil & Gas Calculator for 10 days . . . *without obligation!* Prove to yourself how it can save time . . . cut down costly errors. Mail coupon for FREE 10-day trial. *Send no money!*

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Send the DELBRIDGE Oil & Gas Calculator . . . *without obligation!* We will approve your invoice for $5.00 (plus postage) within 10 days if we decide to keep the Calculator.

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Barrett is new Chairman API Fueloil Committee

AT THE ANNUAL convention of the American Petroleum Institute at Chicago, November 12-15, D. L. Barrett was elected chairman of the Fueloil Committee of the Marketing Div., succeeding A. Jack Becker of Becker-Marsden Co., St. Louis. Barrett is fueloil sales manager for Esso Standard Div., Humble Oil & Refining Co.

William F. Briggs, president of Briggs Oil Co., Middletown, Conn., was elected vice-chairman, and A. V. Fraser, manager of sales promotion, American Oil Co., Chicago, the new secretary.

Wiley Butler, president, Coastal Oil Co., Newark, is the new chairman of the important Research Subcommittee, succeeding Jack Minner of Shell Oil Co., who retired October 13. Four new members were added to this research group, James Lane, Charles Kramb, Vincent Verdiani and J. S. Harris, bringing the total to 13. The others, in addition to chairman Butler, are D. L. Barrett, A. V. Fraser, P. T. Lomenzo, J. S. Harris, A. C. Nelson, C. R. Romer, Tom Scott and Robert Gray. The Fueloil Committee session on Nov. 12 first heard a report from Tim Loizeaux as chairman of the Subcommittee for the Oilpowered Home. He told of studies made which showed that the present probabilities for the self-contained power unit were more in the line of commercial applications than residential, due to the more even load factor.

Research Report

The next report was by D. W. Locklin, Battelle Memorial Institute, Columbus, Ohio, who is research consultant to the Fueloil Committee and coordinator of its research projects.

Locklin outlined the progress to date of the seven contracting laboratories that have been assigned specific studies. Then he described oil company research projects currently undertaken as parts of the API program. Mentioned in this connection were American Oil, Atlantic Refining, California Standard, Esso, Gulf, Shell, Sinclair and Socony Mobil companies.

These projects are mostly of the two to three year type, and API funds have again been allocated for the work in 1962.

Glenn L. Werly, president, National Oil Fuel Institute, next presented a very effective discussion of the promotional and subsidizing activities of competitive fuels.

He told of NOFI actions just beginning to become effective in the fields of codes and ordinances, in Government relations as they affect housing and its equipment.

Utility Maneuvers

Werly spoke of ". . . . a whole family of special business arrangements carried on by utilities, which have one thing in common — the expenditure of utility money to purchase unique privileges in selling in a monopoly pattern to the same customer oil sells to on a free competitive basis." Then he went on, ". . . if you subtract the dollars represented by these privileged inducements, if you take away this special advantage from these utility fuels, our oil picture can straighten out with startling rapidity."

Another prominent speaker, A. V. Fraser, of American Oil Co., addressed his remarks primarily to other refiner representatives on the committee and among the many guests. He took the position that the refiner must take a much more direct interest in providing the full consumer benefits of oil heat, not be interested only in selling some oil.

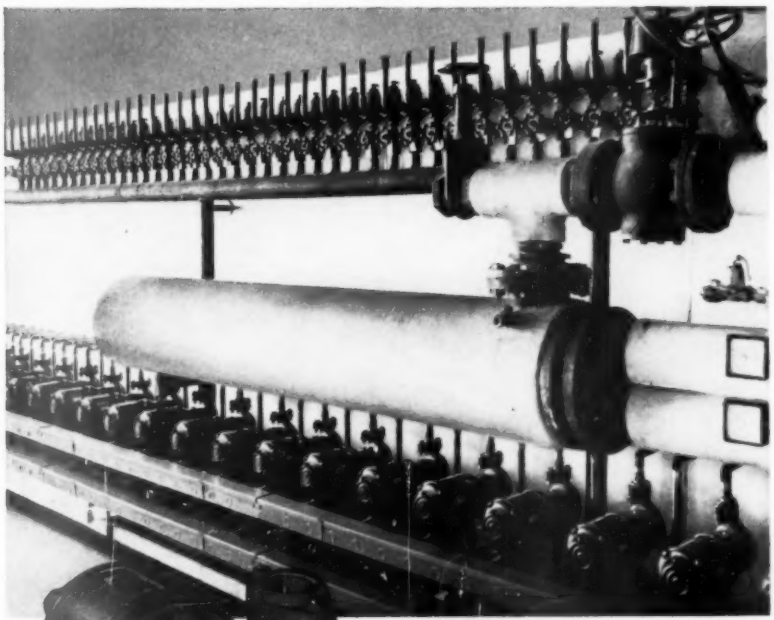
His own company in recent years has moved into the field of burner service, insured budget plans and all of the other customer refinements commonly identified with the independent fueloil distributor.

He did not describe these activities as new methods, *per se,* but rather as things the refiner must either do on direct sales or be sure his local distributors do them.

He outlined American's 6-point program for all areas, called the "Complete Comfort Plan" . . . including such items as October dating of summer fills, complete low-cost burner service. Also institutional promotion of oil heat itself.

Reggie Moffatt, Orlando, Fla., addressed the Jobber Advisory Committee with an excellent chart talk on electric heat competition.

NEAR THE ARCTIC CIRCLE 40 B&G BOOSTERS GIVE RESIDENTS INDIVIDUAL TEMPERATURE CONTROL



B&G BOOSTER

B&G FLO-CONTROL VALVE

The B&G Booster is engineered for compactness, *silent operation* and years of service. It is built by precision manufacturing methods which translate good design into a superior product. Over 3,500,000 have been installed to date.

The B&G Flo-Control Valve is so designed that it can be easily cleaned without removing it from the pipe line.

At Fairbanks, Alaska, tenants in the Anderson Apartments enjoy all the comforts of *radiant Hydro-Flo* heating plus their own choice of temperature. Each apartment is on a separate heating zone and has an individual thermostat to control the operation of a B&G Booster pump. In each circuit, a B&G Flo-Control Valve prevents the possibility of an over-ride in heat.

A 2-pass B&G steam-to-water converter provides hot water for the heating system.

B&G Boosters are designed and built specifically to meet the exacting demands of circulated water heating and cooling systems. Their freedom from maintenance problems as well as quietness of operation explain why B&G Boosters are the preferred pumps.

THE BUILDING:
Anderson Apartments, Fairbanks, Alaska

ARCHITECT:
Philleo Engineering Co.

HEATING ENGINEER:
Fairbanks Plumbing and Heating

PLUMBING AND HEATING:
Fairbanks Plumbing and Heating

GENERAL CONTRACTOR:
Kenneth P. Anderson, Contractor

BELL & GOSSETT
COMPANY
Dept. GX-7, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

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Humidifier that WORKS

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BON-AIR sells **faster** because it works **better!** Scores of thousands of dependable installations make BON-AIR the leader in low popular priced atomizing humidifiers!

You can actually SEE the fog-like mist as BON-AIR automatically atomizes fresh water for immediate, positive humidification. Motor operated, completely assembled for quick, profitable installation. Order now from your wholesaler.

* **NO EVAPORATOR PLATES! NO JETS! NO NOZZLES!**
* **NOTHING MORE TO BUY—EVER!**
* **LIFETIME COPPER CONSTRUCTION!**

ARKLON PRODUCTS COMPANY
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CLEVELAND 18, OHIO

Readers' Forum

JET-HEET INC.
Englewood, N.J.

Editor:

It has been brought to our attention that an article titled "Is Electric Heat Economical?", written by George M. Fraser appeared in the September, 1961 issue of FUELOIL & OIL HEAT, and that reference was made in this article to a "high velocity small tube forced air system, with blenders to aspirate room air to temper the small quantity of high temperature air carried in the tubing".

Reference was made in the article to heat exchanger burnouts experienced in 1956-58 period.

Due to questions from our distributors and the lack of specific tradename in the article, we felt that it would be fair to clarify the article by stating positively that the unit in question is not a Jet-Heet furnace, nor is the system a Jet-Heet system.

We will appreciate your printing this clarification to satisfy any questions that may remain.

ROBERT M. BARR
Sales Manager

MONOGRAM PRODUCTS CO.
Philadelphia, Pa.

Editor:

The article in the November issue of FUELOIL AND OIL HEAT entitled, "Oilheating Has A Growth Outlook for the Years Immediately Ahead" is certainly a splendid example of excellent reporting and fine analysis. It will be most helpful to us in our planning.

We wish to thank you for it.

MARTIN EVOY
President

• • •

New Company organized to market Humidifier

HAMILTON HUMIDITY, Inc., has been organized in Chicago to manufacturer and sell a new home humidifier, the Humid-aire. Both furnace models and portable room units will be marketed.

Harry G. Shaffer is president, B. Shaffer is executive vice president and Bill Hamilton, is treasurer.

WE'RE GETTING the G-E BUSINESS

(AND WE MAKE MORE MONEY TOO)

BECAUSE WE CAN GET G-E REPLACEMENT PARTS

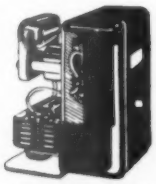
You can get the G-E business and make more money too, when you have the parts. Sid Harvey's has everything you need.

FAST SERVICE

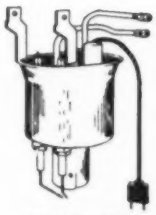
Your customer will appreciate the fast service you can give him and he'll give you the business, because you can get IMMEDIATE EXCHANGES on new and rebuilt G-E replacement parts. Current and obsolete models available in all of Sid Harvey's 50 stores.

LOW COST

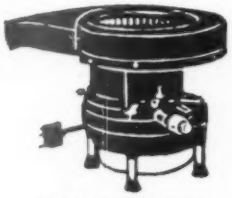
Sid Harvey's rebuilt parts cost about half as much as new in most cases but carry the same guarantee as a new part. You make more money when you use Sid Harvey's rebuilt parts.



MASTER CONTROLS
(New & Rebuilt)



BURNER HEAD ASSEMBLIES
(Rebuilt)



MOTOR COMPRESSORS
(Rebuilt)

FLAME DETECTORS
(New & Rebuilt)

ROTORS
(New)

STATORS
(Rewound)

QUARTZ ROD
(New)

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(New)

NOZZLE WRENCH

SID HARVEY'S CATALOG

Has 288 pages of replacement parts used in servicing oil and gas burners. Used as a reference by thousands of service organizations, this catalog is offered FREE to the trade. Write for it on your letterhead.

GAGE GLASS
(New)

IGNITORS
(New)

G-E SERVICE HANDBOOK
$3.25

AVAILABLE AT 50 SID HARVEY STORES OR BY MAIL

SID HARVEY INC.
VALLEY STREAM, NEW YORK

NEW TOOL FOR FORMULATING HEATING OILS

PARADYNE® HO-20 POUR DEPRESSANT

FOR THE REFINER

Greatly increased freedom to adjust operations and inventories to meet changes in demand. More kerosine available for jet fuel, diesel fuel, or other high value outlets. More high-pour components receiving heating oil instead of fuel oil value.

FOR THE MARKETER

An end to costly operating difficulties formerly unavoidable in cold weather. Unprecedented flexibility in utilizing available heating oil inventory in almost any weather.

EFFECTIVE AT LOW CONCENTRATIONS

PARADYNE HO-20, in concentrations of only 0.01 to 0.1 weight per cent can lower ASTM pour points of heating oils variously by 10 to more than 70 degrees Fahrenheit.

HOW IT WORKS

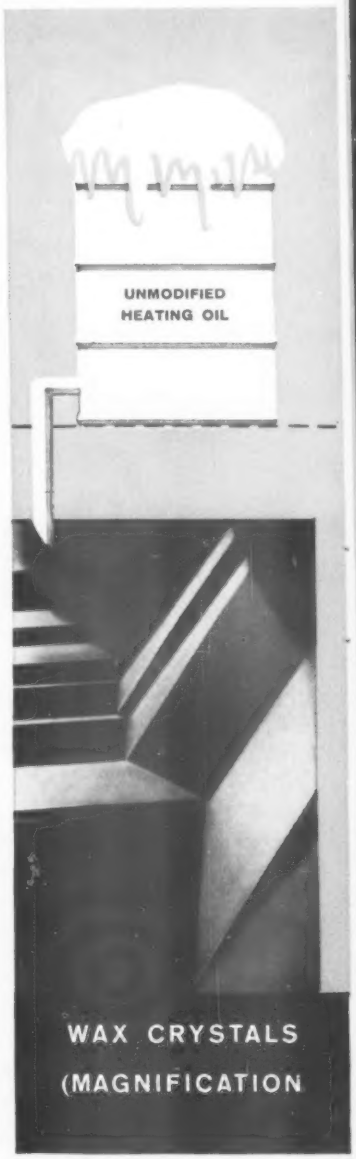
PARADYNE HO-20 drastically modifies the size and structure of wax crystals formed when heating oil is cooled below its cloud point. The pictures in the centerfold demonstrate its effect.

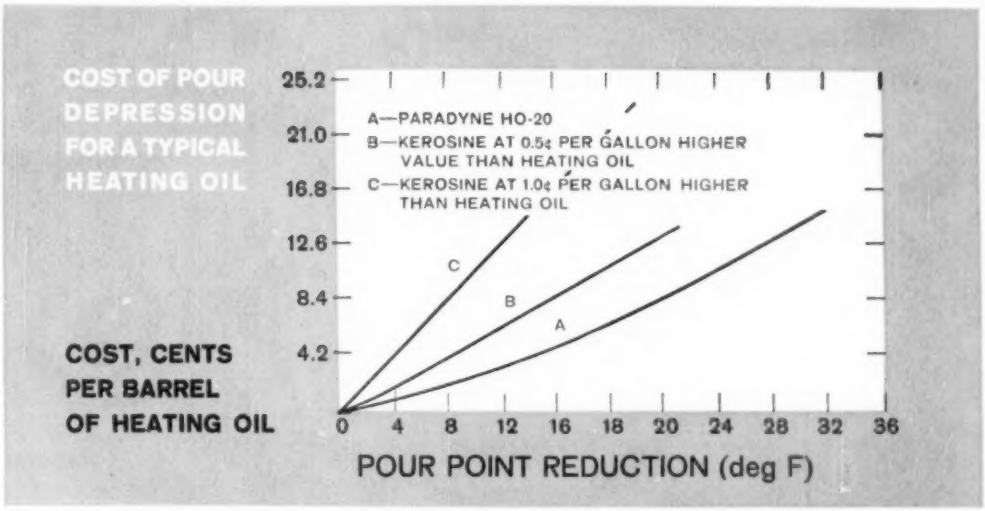
WINTER FIELD TESTS REVEAL OUTSTANDING EVIDENCE...

In addition to extensive laboratory tests, a wide range of field tests have been carried out in Canada and Maine during severe winter climate.

Two heating oils having natural pour points of 20°F and −5° were both depressed with PARADYNE HO-20 to −45°F and −40°F. The fuels were evaluated for low temperature flow properties in 12,000-gallon storage tanks, in tank truck deliveries, and in 524 home heating units.

Even though the ambient temperature reached −30°F, good operability was obtained in storage, delivery, and customer units.





AND HERE'S HOW THIS ENJAY ADDITIVE STACKS UP IN COST AGAINST KEROSINE...

The cost of lowering the pour point of a typical heating oil with PARADYNE HO-20, compared with kerosine may be seen here at a glance.

BLENDING FLEXIBILITY

PARADYNE HO-20 may be added to heating oil at any point in the distribution system – at the refinery, bulk plant, or at the local terminal.

EASY EVALUATION OF EFFECTIVENESS

It's easy to determine how much PARADYNE HO-20 to use by simple ASTM pour determinations:

1. Test the response of your heating oil to PARADYNE HO-20.
2. Evaluate heating oil response over a range of additive concentrations.
3. Vary proportions of various stocks to be blended in the finished fuel. Generally, to effect maximum savings, evaluate the effect of high-pour components on blends.

COMPOSITION AND APPEARANCE

PARADYNE HO-20 is approximately 50% of active ingredient in kerosine. It is liquid at room temperature.

EASY TO STORE AND HANDLE!

For further information, contact the nearest Enjay office or write to:
15 West 51st Street, New York 19, New York

ENJAY CHEMICAL COMPANY
A DIVISION OF HUMBLE OIL & REFINING COMPANY

ENJAY
ADDITIVES

EXCITING NEW PRODUCTS THROUGH PETROCHEMISTRY

handle widely different petroleum products profitably with ROPER PUMPS

Roper Series 3600 truck pumps easily handle both thick and thin petroleum products from crudes to low viscosity gasolines. Two equal-sized, hardened alloy iron, helical gears with accurately machined special tooth forms mesh perfectly to give you positive displacement, positive pumping of your loads. The precise manufacture of these units gives you long, maintenance-free service that pays off in extra deliveries, and you will find Roper pumps step up operating efficiency and step up your profits. Equip your trucks with Roper pumps and you will enjoy more competitive delivery and service.

- **PACKED BOX** or mechanical seal pumps are available to best suit your needs.
- **CAPACITIES** in a wide range of sizes can fill your needs for small deliveries or bulk transport.
- **RELIEF VALVE** permits operator to close discharge during delivery without stopping the pump.

ROPER
HYDRAULICS, INC.

For specific information contact your Roper dealer

Dependable pumps since 1857
COMMERCE, GEORGIA

Wm. Wenszell of Webster reports European Activity

WILLIAM J. WENSZELL, sales manager of Webster Electric Co.'s Heating Div., has just visited his company's plant at Darmstadt, Germany, and reported back on results of its first year operation. A sales and distribution system for Europe is being completed after having established a network of Webster authorized service stations.

Wenszell reports that Germany alone has 200 oilburner manufacturers, each producing from 500 to 20,000 units a year . . . he predicts 200,000 installations for 1962 in that country. Only 20% of German homes have central heating systems, he pointed out, and 17% of these use oil heat today. Gas heating is practically unknown.

The Darmstadt plant is primarily for assembly, testing and selling of the pumps, with the principal parts being produced at the Racine, Wisconsin, plant and shipped overseas. As a result of the recent inter-country tariff advances, it is more economic to machine parts here and assemble them there.

In addition to the Darmstadt plant, Webster has manufacturing licensees in England, Australia and Canada.

Tenneco buys Jersey fueloil Companies

MITCHELL OIL SALES CO., Montclair, and Supreme Fuel Oil Co., Orange, N.J., were combined following organization of a new company, Mitchell Supreme Fuel Co. The firms were purchased by Tenneco Oil Co., Houston, and will operate within the Hartol sales division.

W. W. Eversmann, vice president, Hartol, is president of the new company; George De Vita, president, Mitchell Oil, is vice president; E. J. Norman, former Mitchell vice president, is general manager; and Niel Van Vliet, formerly Supreme treasurer, has been named credit manager and assistant secretary and treasurer.

Luxaire® OIL UNITS

HAVE THE CONTROLS YOU WANT... LOCATED WHERE THEY WORK BEST!

New Luxaire Oil Fired Units have the Primary Control furnished for installation on the flue stack – where you like it for easy access and service!

For factory assembled and wired models, all internal wiring is completed and wiring leads are furnished to the Primary Control. In basement models, leads are provided for mounting of the Combination Fan & Limit Control on the plenum chamber!

The combination of a Cylindrical Heavy Gauge Heat Exchanger and Refractory Firebox Liner–installed in most models at the factory–provides quiet, dependable operation!

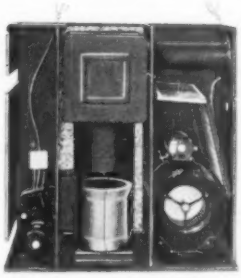
The Standard Equipment Blower is big – sized for quieter heating performance and for the addition of air conditioning at minimum expense!

If you want Oil Fired Units with the competitive qualities and prices that really satisfy your customers, see your Luxaire Distributor, today!

ANOTHER Luxaire COST CUTTER

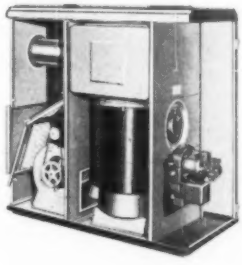
PLUS High Air Deliveries for Cooling

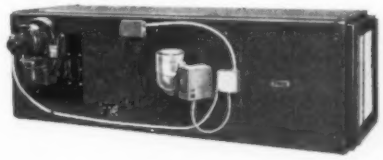
New Series OW Assembled and Wired Basement units – 84,000 through 140,000 Btuh – showing interior construction with factory-installed wiring, refractory firebox and large-capacity air handling.



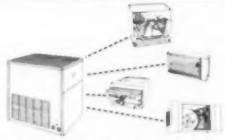
New Series HO Assembled and Wired Upflow Units – 78,400 through 112,000 Btuh – showing interior construction with factory-installed wiring, refractory firebox and sturdy, compact construction.

Series O Unassembled Basement Units – 84,000 through 224,000 Btuh – deluxe winter air conditioners, handsomely styled with vestibule and hinged door – easily handled and assembled.





Series OY-E Assembled and Wired Oil Horizontal Units – 89,600 through 224,000 Btuh – low, slender and compact with extra air handling capacity for air conditioning.



2, 3, 4, 5 and 7½ Ton Air Cooled Condensing Units – Companion Plenum, Duct, and Counterflow Coils – Air Handling Blower-Coil Units.

2 and 3 Ton Air Cooled Self-Contained Summer Air Conditioners – available with or without Evaporator Blower.

2, 3, 4 and 5 Ton Combination Year 'Round Air Conditioners – Oil Heating – Air or Water Cooled Condensing.

Luxaire®
THE C. A. OLSEN MFG. CO.
ELYRIA, OHIO

Acme
FLAMMABLE
FORD
A5830 35

"Ford Trucks have cut maintenance costs 93%... almost doubled our net profits!"

says Robert Dohse, President of Acme Transport Company, Oelwein, Iowa

"Our net profit for the first three quarters of this year is almost double that of last year, and most of the credit for this increase belongs to our five Super Duty and two Diesel Ford Tandem tractors.

"We like Ford's excellent performance, superior riding qualities and low initial price. But from our standpoint, *Ford's greatest economy feature is the almost complete absence of repair costs!* We've run these seven tandem tractors 750,000 miles without as much as one minute's downtime. For example, our 1960 T-850 with 534-cu. in. Super Duty V-8 has logged 150,000 miles pulling a 9,200-gallon tank trailer (73,000-lb. gross) without any nonroutine shop time.

"Now for a closer look at the records, the total maintenance expense on our Fords averaged $19.09 per truck, per month. Competitive make trucks (none more than a year old) were costing us $310.39. Also, that vexing problem of downtime is a thing of the past—we know our Fords will always be available when needed.

"After driving Fords, our drivers tell us they wouldn't care to go back to our former equipment. Ford's cab design and handling qualities are such that there's much less fatigue at the end of a run.

"For our money Ford Trucks are the best possible investment in over-the-road equipment, and we're buying two more Diesels and another Super Duty Tandem."

Solid testimony that Ford's full-time economy only starts with low price!

FORD TRUCKS COST LESS

PRODUCTS OF Ford MOTOR COMPANY

Service Station Signs help Florida Promotion

THE BETTER HOME Heat Council of Florida has enlisted the help of the major oil suppliers of the state to display signs advertising oilheating at their service stations. Eventually the number of stations is expected to reach 4,000.

It was a suggestion of Reggie Moffat of the L. A. Johnson Fuel Oil Co., Orlando, and past president of the state group made last August . . . and it was enthusiastically endorsed by the suppliers.

Starting November 1, three majors with over 1,700 stations initiated the activity. These were American Oil Co., Pure Oil Co. and Shell Oil Co. Others will follow.

In addition, several majors have been running oil heat inserts on their news and weather television programs. Standard Oil included oil heat commercials on its University of Florida football broadcasts.

The professional details of the Florida campaign are handled by McAllister-Barker Adv. Agency, Orlando, and John Simmons of McCall Service, Inc., Jacksonville, is president.

John W. Simmons, president of the Better Home Heat Council of Florida, pins up the first tent-like promotional material for the service station promotion.

Advertising material to promote oilheating in more than 4000 service stations in Florida goes up in Walter Westling's Sunoco station in Jacksonville, Fla. From left to right are John C. Kirkpatrick, Westling and E. H. Beardsley.

Some refiner representatives of the Better Home Heat Council of Florida, from the left, Dick White, Shell Oil, Ed Smithson, Phillips Petroleum, Mark Barker of the agency, Phil Pickering, Delhi-Taylor, and George Crawford, Shell.

ASHRAE's semi-annual meeting set for January

THE SEMI-ANNUAL Meeting of the American Society of Heating, Refrigerating and Airconditioning Engineers, New York, N.Y., will be held January 29 through February 1, 1962, at the Chase-Park Plaza Hotel, St. Louis, Mo.

The program will feature four technical sessions, seven symposiums and six forums. Among the papers to be presented at the technical sessions will be one on Energy Sources and Requirements for Residential Heating, and included in the symposiums will be discussions of steel boiler ratings, combined heating and air cooling systems and room airconditioners.

Upgrade your prospects and profits

there's GOLD in this Mueller Climatrol Electric Humidifier

Declare a bonus for yourself. Sell the Mueller Climatrol 50-810 Electric Humidifier. You won't find a more profitable option that's easier to sell or easier to install. Add it to existing installations or new ones—the 50-810 is a nice bonus for very little extra selling effort. You'll find it's the perfect product for off-season selling, too.

SELL PERFORMANCE — Humidification is positive, automatic, controlled — doesn't depend on amount of heat from the furnace. 800 watt "Incoloy Sheath" heating element adds up to 28 qts. of moisture to the air daily — enough for a 2000-sq. ft. house.

SELL CONVENIENCE — Customer controls the 50-810 by setting dial on unit or setting optional Humidistat Control in living area. Double-liner reservoir pan catches scale that may accumulate in hardwater areas. Aluminum inner pan can be removed and replaced without getting fingers dirty.

FEWER CALL-BACKS — We've eliminated the two most troublesome elements: (1) needle valves that clog, and (2) floats that leak or disintegrate. Water level is electrically controlled by a solenoid valve for continuous operation night and day.

MC-106

Mueller Climatrol means quality
. . . and quality means profit!

Mueller Climatrol
DIVISION OF WORTHINGTON

2050 West Oklahoma Ave., Milwaukee 1, Wis. • 1024 Westminster Ave., Alhambra, Calif. • 2490 Bloor St., West, Toronto 12, Ont.

PREHEATING FUEL OIL?

FREE CATALOG
Describes Industry's Broadest Line of Quality Heaters!

GENERAL Automatic Electric Immersion Heaters . . . in types, sizes and constructions to match most installation specifications . . . are standard equipment on boilers produced by many leading manufacturers. Superior designs, highest quality materials and precision construction pay off in operating efficiency, long service life and minimum maintenance.

If your installation requires preheated fuel oil, be sure to check the outstanding design features of GENERAL units before installing or replacing electric preheaters.

Catalog EH-100 describes GENERAL'S complete line of electric Fuel Oil Preheating Units (750 to 60,000 watts). Request your copy today!

GENERAL FITTINGS COMPANY
EAST GREENWICH • RHODE ISLAND

OHA of Canada Lists Ad Campaigns in 15 Areas

IN THE FISCAL YEAR ending February 28, 1961, the Oil Heating Association of Canada had cooperative advertising campaigns in 15 cities or metropolitan areas with a total investment of $122,070. In the succeeding fiscal year, to end next February, the estimated expenditure is $210,000. The markets and their individual outlays in the period ending last February were:

Brantford	$ 1,939
Cornwall	8,270
Galt-Preston-Hespeler	1,375
Hamilton	12,108
Kingston	1,086
Kitchener-Waterloo	3,733
Lakehead	5,655
London	2,268
Montreal	48,690
Norfolk County	365
Ottawa	11,990
St. Catharines & District	4,449
Sudbury	5,460
Toronto	12,678
Winnipeg	2,004

One-third of the amounts were furnished by major and independent suppliers, two-thirds by dealers. While the Canadian suppliers do not match the dealers 50-50 as in the States, they nonetheless pay into the dealer side moneys to represent their direct retail business . . . thus the contribution basis is not directly comparable with that of the NOFI programs.

OHA has three main divisions — Refinery & Wholesale Suppliers with 10 member companies, Retail Fueloil Division with 427 members in 20 chapters, and Equipment Manufacturing Division with 60 members.

The funds furnished by the suppliers are not all needed for their share of the local campaigns. During 1960 they have provided $50,000 toward the cost of a 10 week television program on 20 stations. The total TV cost was $67,000 with the remaining $17,000 coming from OHA general funds.

Arnold J. Rowe-Sleeman is managing director of the association. D. J. Brooker of Aero Tool Works is president as well as chairman of the equipment manufacturing group. J. H. Taylor of Liquifuels, Ltd., is chairman of the suppliers group. The retail fueloil division has no central chairman but eight regional directors.

INSTANT INVOICING SPEEDS DELIVERY

You can easily earn $360 more per truck, per season with new Lockheed Computing Register

The moment you stop pumping, the Lockheed Computing Register is ready to deliver a completely calculated, printed invoice. All you do is turn the handle. You save *at least* one minute at every stop. If that minute is worth only 10¢, (usually, it's more) and you make, say, 30 deliveries a day, you save $3.00 daily. In an average 120-day heating season that's $360.

Cutting delivery time is just one of the ways the Lockheed Computing Register makes money for you. It eliminates errors. It saves clerical, typing, billing and mailing expense. On postage alone, the Register can save you hundreds of dollars a year. It calculates sales tax, discount, and total price, automatically. And because every tenth of a gallon is figured in, the Register adds earnings you may now be missing.

Other features: pre-set counter and totalizer, easy installation on any meter, zero maintenance, a cinch to use. Important, too, the Lockheed unit builds customer confidence and employee goodwill.

See your jobber for details. If he does not yet have complete information please contact: **Lockheed Electronics Company, a Division of Lockheed Aircraft Corporation, Telephone Metuchen, N. J., LIberty 9-5000 "collect."**

SUREFIT®

pipe, duct, stack and fittings

FIT YOUR NEED TO REDUCE INSTALLED COSTS

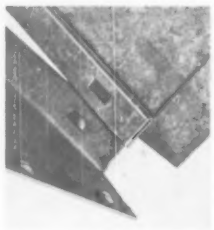
If you want the time you need to **sell installations**, instead of "working for wages" running a shop, you'll use SUREFIT Pipe and Fittings.

SUREFIT is the complete prefab' line — manufactured with modern, mechanized production methods, and providing excellent qualities which most small shops can't match — at far lower cost to you.

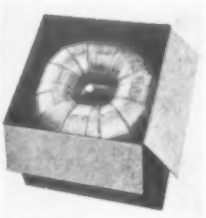
Because of these qualities, SUREFIT Pipe and Fittings are easily and speedily installed — at far lower cost to you.

Although SUREFIT is an extraordinarily good line of Pipe and Fittings, SUREFIT costs no more than many shoddily made lines.

Ask your wholesaler about SUREFIT and write for the new, complete Catalog No. 250, now.



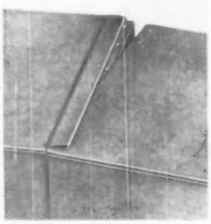
Accurate Fit of the Snaplock Side Joints makes SUREFIT Duct and Stack easy to assemble.



Safe Shipment with the goods undamaged on arrival is made possible by SUREFIT Carton Packing.

Speedy Assembly of SUREFIT Pipe. Continuous Seam or Buttonlock, this pipe goes together **Round.**

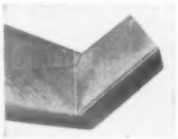
Convenient Storage with minimum floor space . . . another advantage of SUREFIT Packaging.



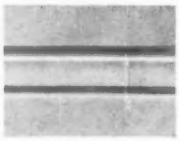
Secure Fit of the Snaplock End Joints makes SUREFIT Duct or Stack easy to put together.

Easy Handling . . . SUREFIT Duct or Stack readily slide from end of carton, one or more at a time.

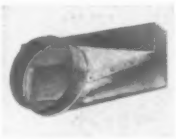
Unexcelled **CONSTRUCTION** • ***Non-Restrictive*** **DESIGN**



SUREFIT Register Boot, showing the rolled seams and riveted side construction.



SUREFIT Duct, showing the Pittsburgh Lock corner construction.

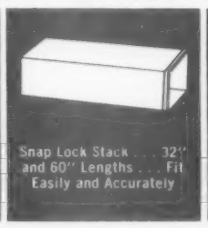


SUREFIT Angle Register Boot, showing the full throat for unrestricted air flow.

SUREFIT

THE HENRY FURNACE COMPANY • MEDINA, OHIO

ROUND PIPE • ELBOWS • ANGLES • DUCT • STACK • FITTINGS • PLENUMS



Ambitious Programs reviewed at National Oil Fuel Meeting

THE TWO-DAY annual membership meeting of the National Oil Fuel Institute took place at the Waldorf-Astoria Hotel, New York on October 17 and 18.

Everett Elliott was re-elected chairman of the board; G. M. Marin and P. T. Lomenzo were named vice-chairmen. A board of directors also was named.

The two-day program included the annual meeting, the board of directors, followed by separate meetings of the Advisory Councils of the dealer and manufacturer divisions. There were meetings also of the recently-formed fueloil handling and oilfired water heater sections.

Glenn L. Werly, NOFI president, revealed at the meeting that membership now consists of 19 refiners, 76 oilheating manufacturers and 5,686 dealers. Referring to oilheating promotion, he said that total expenditures this year would amount to more than $3 million; this includes locally-raised funds, plus matching funds from participating refiner members.

Werly cited NOFI accomplishments, such as a brief filed with Federal Housing Adiministration on oilheating efficiency and a brief on air pollution presented to New York State officials to establish oil's position. Other projects include challenging misleading statements in gas heating advertising and a study of gas utility subsidies for gas heating.

He summed up the progress of NOFI during its short existence as a modest beginning which will be furthered by aggressive expansion.

Communications

Ralph T. Hartell, communications director, introduced a NOFI symbol. This will be used for general identification by NOFI members on letterheads, literature, promotion, etc. and in time will be part of a NOFI-sponsored program of equipment testing and rating.

Hartell also showed a sound-slide film which documents the objectives of NOFI and which will be used in membership drives.

Promotion

P. T. Lomenzo, reporting for the Promotion-Communications (Refiner) Division, said that there now are 86 markets where oilheating advertising campaigns are conducted. For 1961 the projection of monies to be spent totals $3,049,000, compared with $2,650,000 in 1960 and $1,988,000 in 1959. Lomenzo pointed out that advertising outlay in these programs has not grown spectacularly because there was not too much field work. However, he added that several other refiners probably would join soon and refiner contributions would be higher because they would be based on ½¢ a barrel to cover the larger volume of 1960 No. 2 oil sales as reported by the Bureau of Mines.

Lomenzo also introduced the interesting possibility of identifying the 275-gal. tank as a status symbol of security. He described how the Connecticut Fueloil Council has been promoting the tank as a corner stone of home security in case of war. The idea is to use oil from the storage tank to operate a diesel generator to provide housepower if the electricity is off. Lomenzo's company, Atlantic Refining, has become interested enough to put together a suggested advertisement, identifying an oil tank as the homeowner's "survival kit".

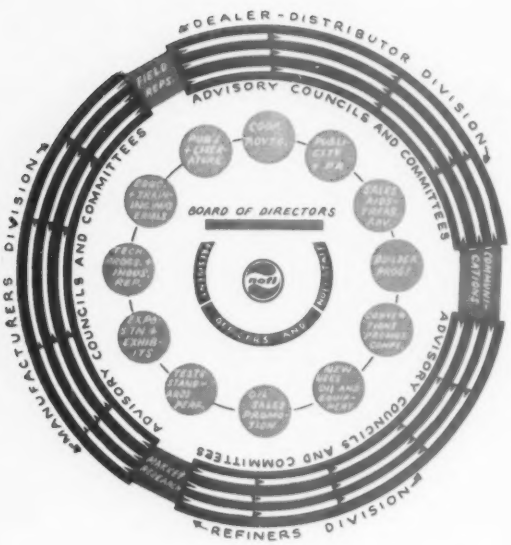
Market Research

Information on the new market research activity was presented by John Lichtblau, Research Director, and Sandra Alwin, Research Associate, who will devote full-time to NOFI programs and projects.

Lichtblau explained that a study of each market where oilheating is important is under way and this would be followed by a study to determine if competitive fuel price is reflected in burner installations. A longer term project is in the field of economics to

(Please turn to page 40)

Glenn L. Werly, president, National Oil Fuel Institute, is shown addressing a session of the organization's first annual meeting on October 17 at the Waldorf-Astoria, New York City. Also shown, left to right, are George Gruberg, legal counsel, and Everett Elliott, chairman of the Institute's board of directors.



NOFI is in Business

Robert D. Lynch has joined the National Oil Fuel Institute as field representative, reporting directly to President Werly. Sharply-increased NOFI dealer-distributor membership, addition of more Chapters, new and expanded programs active in the field for all Institute divisions led to this NOFI staff development. Lynch's entire career has been in fueloil, for the past five years with Hartford Better Home Heat Council.

THE "ONE-ROOF" association, National Oil Fuel Institute, was legally constituted on June 1, but actually has been operating for some ten months.

The pictures on these pages demonstrate in some measure the many activities that NOFI has undertaken in this comparatively short period. Most of them are continuations or extensions of the programs of the predecessor organizations, National Fueloil Council and Oil-Heat Institute of America. But, there are new and important projects which NOFI has instituted.

Staff members pictured here are, far left, G. L. Werly, president; in the group at the left, upper left is C. H. Burkhardt, vice-president; upper-right, F. S. Burroughs, vice-president; lower right, Robert Griffin, assistant to the president and lower right, R. T. Hartell, communications director.

The by-laws specify four membership divisions and each of these is proceeding with ambitious programs. The divisions are: Marketing-Distribution (Dealer); Promotion-Communications (Refiner); Equipment-Technical (Manufacturer) and Research, which can include members from any of the other divisions. The pie-chart in the upper left outlines the scope of the organization.

The other pictures demonstrate the variety of NOFI activities and show some of the people.

The staff at work: Upper left, Market research staff, John H. Lichtblau, director, La rne Stevenson, secretary and (right) Sandra Alwin, research associate. Upper right, Communications director Hartell and Joan Sidor, PR staff specialist.

Right, George N. Dillon, office manager, confers with Pres. Werly and Hartell. Far right, Vice-president Burroughs and D. H. Bottrill, Technical Div. secretary.

Below left, Vice-president Burkhardt discusses a problem with Susan Ainge, insurance trust administrator and, below right, Burkhardt is with recently-appointed Education Director E. W. Garrison.

inquire into the contribution of distillate fueloil to the industry's growth and earnings. The study will consider the fact that the oil industry earns more on a Btu of heating oil than on a Btu of natural gas. Thus, when an oil customer is lost to gas, the oil industry loses revenue. The obvious conclusion seems to be that the oil industry must do everything possible to promote and encourage the sale of oil-heating equipment.

Miss Alwin added that specific studies would explore a variety of questions, such as why are some markets weaker than others, is it rates, competition, promotion; what advertising themes are most effective for what conditions? Analysis of area information will be made at all levels of industry activity. The results will enable each market to know how it is doing in relation to its neighbors and to the industry as a whole.

BOARD OF DIRECTORS
National Oil Fuel Institute

(Elected at annual membership meeting, October 17, 1961)

PROMOTION-COMMUNICATIONS (REFINER) DIVISION

American Oil Co., A. V. Fraser
Atlantic Refining Co., P. T. Lomenzo
Bay State Refining Co., Stuart Milster
Berry Refining Co., J. Van Pelt
California Oil Co., H. J. Haynes
Cities Service Co., P. A. Peterson
Delhi-Taylor Oil Corp., R. L. Berry/J. O'Donnell
Esso Standard Div., D. L. Barrett
Gulf Oil Corp., C. E. Kramb.
Hess Inc., Leon Hess
Leonard Refineries, Inc., L. R. Kamperman
Mobil Oil Co., Arthur Nelson
Ohio Oil Co., Grant Young
Phillips Petroleum Co., F. L. Koopman/K. E. Gardner
Pure Oil Co., C. R. Jonswold
Shell Oil Co., J. S. Harris
Sinclair Refining Co., C. R. Romer
Sun Oil Co., V. L. Verdiani
Tidewater Oil Co., R. A. Sanborn

MARKETING-DISTRIBUTING (DEALER) DIVISION

Oil Heat Institute of New England, Everett Elliott
Better Home Heat Council (Boston), Richard Gardner
Better Home Heat Council (Hartford), Merwin Sheketoff
Home Heating Council (Providence), Raymond Mullaney
Oil Heat Institute of Buffalo, R. B. Newman
New York Oil Heating Association, Fred Heaney
Oil Heat Institute of Long Island, Ray Nathan
Empire State Petroleum Association, William Kenny, Jr.
Fuel Merchants Assn. of New Jersey, T. R. Loizeaux, Sr.
Oil Heat Council of New Jersey, Irving Oelbaum
Pennsylvania Oil Heat Council, Albert Woosnam
Better Home Heat Council of Florida, Reggie Moffat
Tidewater Oil Heat Assn. (Norfolk), Corbin White
Oil Heat Association of Maryland, John Wailes
Wisconsin Petroleum Association, Charles Stoffel
Oil Heat Institute of Indianapolis, Francis Schuster
Michigan Petroleum Association, William Torrence
Northwest Petroleum Assn. (Mineapolis), Gordon Haglund
Oil Heat Institute of Washington, James Gilleland
Oil Heat Institute of Oregon, Al Loucks

EQUIPMENT-TECHNICAL (MANUFACTURER) DIVISION

Eddington Metal Specialty Co., Stanley Czarnecki
Sun-Ray Burner Mfg. Co., G. M. Marin
Combustion Control Division, L. D. Sibley
Stewart-Warner Corp., W. E. Blake
Industrial Combustion, Inc., Verne Resek
American-Standard Corp., L. G. Shenk
Sundstrand Hydraulics, C. W. Lang
Minneapolis-Honeywell Regulator Co., K. L. Wilson
Iron Fireman Mfg. Co., R. C. Wright
Ray Oil Burner Corp., Russell Westover

EXECUTIVE COMMITTEE

Everett Elliott, Ch.	A. V. Fraser	Fred Heaney
G. M. Marin, Vice-Ch.	C. E. Kramb	Ray Nathan
P. T. Lomenzo, Vice-Ch.	J. S. Harris	Tim Loizeaux, Sr.
D. L. Barrett	Stanley Czarnecki	Francis Schuster
Arthur Nelson	W. E. Blake	Al Loucks

Education

C. H. Burkhardt, NOFI vice-president, introduced Edward Garrison, recently appointed director of education. Burkhardt announced that NOFI would publish a credit manual in December and follow with a sales, marketing or technical manual every six or eight weeks. Also, he said that a general Education Committee in the Institute would continue its work under the chairmanship of Robert W. Hundley, FUELOIL & OIL HEAT.

Garrison outlined a program for 12 management institutes to run from April through June. This will be part of an over-all education program to include courses for owners, operating managers, technical and service training and salesmanship. There are plans, too, to expand commercial-industrial oilburner training. (See pg. 59, October 1961 FO&OH for a comprehensive outline of the education program).

Oilfired Water Heater Section

Murray Green, chairman, described the Section's program for the development of approval requirements and standards for oilfired water heaters. The proposal, which envisions the use of the NOFI seal on approved equipment, plans to have testing and rating done by an independent laboratory. This not only would standardize methods, but eventually might lead to using the laboratory for testing all types of oilfired equipment.

Basically, Green continued, the program aims at establishing specific testing requirements and the necessary enforcement procedures. Green expressed the opinion that NOFI should join the American Standards Association and look ahead to the certification by that organization of oilfired water heater standards.

Fueloil Handling Section

Progress in the organization of the Section was reported by Chairman Gilmore Hiett. A committee is preparing an outline on modern fueloil delivery equipment and techniques to be used initially in the NOFI education program. The broad aim, however, is the dissemination of the fueloil handling equipment story on the

(Please turn to page 66)

THE OIL HEAT VIEWPOINT ON

Air Pollution Problems

History of Oilheating includes a Series of Steps to improve Combustion; more Improvements lie ahead

by John W. Schulz

EVERY MAN concerned with the future of the oilheating and fueloil industry, particularly with the continued and extended use of fueloil, should be well aware that throughout the nation increasing emphasis is being placed on air pollution and every detail related to it.

Efforts to avoid and diminish air pollution are being made at levels of states, cities and towns. Oilburner installations are of particular interest to the authorities making these efforts ... and the reasons for this are of tremendous importance to the men of the fueloil and oil heat industry.

Moves towards smoke abatement and reducing air pollution can be made for reasons entirely good, entirely based on what is best for a state or community. Changing conditions have made necessary certain, proper moves to avoid excessive pollution of the atmosphere.

During the nineties, the belching of vast amounts of smoke from the stacks of local factories was a welcome sight for the inhabitants of many small towns. The smoke, produced by hand firing of bituminous coal, and accepted gaily, represented prosperity for the workers in the town. It meant the factories were working full tilt, that men were employed in great numbers, and that the entire town enjoyed prosperity. In the nineties, gloom settled on the town when smoke stopped pouring from the stacks of its factories, for this meant closing of factories, ending of workers' incomes, depression, and stark misery.

Times changed swiftly and greatly. Population increased. So did the pollution of the atmosphere. In many localities this pollution was caused mainly by hand firing bituminous coal, and those fighting for cleaner air correctly recognized this fact and made open and large scale war against hand-fired soft coal. They won, and this taught the important lesson that the use of a fuel and a firing method can be discontinued legally if it pollutes the air.

During recent years the atmosphere has not, then, been greatly polluted by smoke from soft coal, as it had been earlier. But in recent years the population continued growing, some authorities declare it exploded, and the pollution of air increased because of great increases in numbers of automobiles, diesel trucks and locomotives, and other equipment producing objectionable gases.

Suddenly, starting about five years ago, certain state and city authorities concerned with air pollution developed a fierce and active interest in all kinds of oilburner installations. In particular cities and states these authorities made efforts to establish laws and rules and regulations which, if put into effect, would put great penalties on the use of fueloil and oilburners — mainly by increasing the cost of new oilburner installations, and causing owners of already installed oilburners to buy additional equipment and alleged improvements.

Efforts to improve oilheating on the part of law-makers, and makers of rules and regulations, would be laudable — if these efforts represented the use of common sense, a thoroughly good and practical knowledge of oilburners and combustion, and a sincere desire to benefit the population by reducing atmospheric pollution.

However, gas interests in trying to improve their relative position were the instigators of many recent efforts to put into effect more rigid, legal controls on oilburner installations. Some of the new regulations are absurd in that they cause money to be spent on new and old oilburner installations without accomplishing a thing related to reduced air pollution.

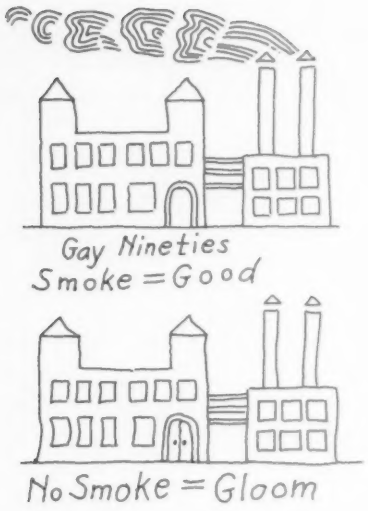
Yes, rules and regulations put into effect strictly for the purpose of preventing excessive air pollution can cause spending of money without accomplishing anything — can cause outright waste of the money spent.

A good Example

An excellent example of this is found right now in New York City. Here a contractor installing a new oilburner which will use residual fueloil must provide the installation with a smoke detection and alarm system which costs the oilburner purchaser $250 to $350. Such a system necessarily has one or more adjustment devices. It has to have, as the smokepipe or breeching through which the system sends a beam of light may cause the light beam to travel two feet or six feet or any distance in between.

For the smoke detection and alarm system to work as its manufacturer intends, and as should be intended by the clean-air authorities who require its installation, the system has to be carefully adjusted so that a certain amount of chimney smoke causes it to turn on a bell or a buzzer, which usually is in the boiler room, where the regulations permit it to be.

Proper adjustment of such a set-up,



according to many qualified authorities, takes more than a few minutes of time. It includes: a) Deciding which smoke reading is excessive; b) Carefully adjusting the oilburner to produce smoke just slightly excessive; c) Using a Shell-Bararach or similar smoke-checking instrument to evaluate numerically this slightly excessive smoke which the oilburner is producing; and d) Adjusting the electronic smoke-checking system to sound its boiler-room bell or buzzer when increasing smoke becomes of the density which was decided as slightly excessive.

Here's the utterly silly part of the situation in New York City, which makes fully wasted the $250 to $350 that the oilburner owner is forced by law to spend on his smoke-check and smoke-alarm system.

First, when this system is put to work after its installation is completed, it may be calibrated in any fashion by its installer, by a serviceman, by a janitor, or by anyone else. No-one representing any city department supervises the all-important work of smoke calibration — though the smoke equipment will not serve its intended purpose if it is not calibrated properly. In effect, the city authorities require that this expensive set-up of smoke-control equipment is installed — but then are not concerned if it sounds off for light smoke, or for heavy smoke, or never sounds off no matter how dense the smoke.

Second, and to judge by experiences in hundreds of New York boiler rooms I've visited in recent years, no representative of a city department checks regularly where one of the smoke-control set-ups is installed — to make certain that after it is properly installed and adjusted it is kept working properly and accurately.

Third, the janitor or superintendent or custodian of a typical building having one of these smoke-alarm systems seldom is in his boiler room. He does not have to be there many minutes a day, as his oilburner is fully automatic.

Yet as this smoke-checker almost invariably is installed, because this meets the city requirements, excessive smoke simply turns on a little buzzer in the boiler room. In most boiler rooms, 95% of the time during the day, and 100% of the time during the night, the boiler room is unattended, hence no-one will hear a buzz in it caused by excessive smoke. With an oilburner running and the boiler-room door closed, in most buildings the buzzer cannot be heard outside the boiler room.

A New York City official, who had much to do with many smoke-abatement requirements including the requirement that new residual-oil installations must have smoke-checking equipment, a few years ago told a group of oilburner men at a Philadelphia meeting that things would please him if only gas, no fueloil, were used in New York buildings.

A public servant who openly and ardently loves gas heat, and openly is opposed to oil heat, might just be pleased to do his best to have a $250 to $350 smoke-checker installed by law on every new installation using residual fueloil — even though he knows the smoke-checker will accomplish not one thing towards reducing smoke, if not properly calibrated when installed, if not officially and periodically checked for proper, accurate performance, and if 98% of the time its warning buzzer cannot be heard by anyone.

However, that's the pattern of the men who work at advancing the interests of gas heat. When they cannot do their work directly, they work indirectly by trying to block the progress of oil heat. They believe that anything that's an obstacle to oil heat

is a help to gas heat — and in so believing they of course are correct.

This pattern they have used successfully in the past at levels of states, cities, and towns:

A — Government men in a position to act on this become conscious of the overall increasing interest in air pollution, and decide to set up new laws or rules and regulations regarding fuel-burning installations and everything related to them. Often this coincides with gas company efforts to increase the use of gas for domestic heating or commercial-industrial heating or both.

Difficult to prove is whether or not gas company men nudged the officials into starting to draw up new fuel-burning requirements. Of a certainty, however, the government men are not against the new law-writing and law-enforcing activities they are proposing.

B — With the movement towards new fuel-burning equipment regulations started, gas company men exceedingly well qualified for this work, and well backed by highly respected national organizations, do almost all of the work of drawing up the new requirements. They emphasize the truly excellent work a local gas company can do in making for safety on every new gas installation. They point out that oilburner installations are completed by many little companies, are controlled in no way by a large organization that emphasizes safety. Hence,

they conclude, gas heat jobs need few laws regarding safety — oil heat jobs need rigid, exacting, laws or rules and regulations.

C — In the past the way this pattern ran, only local talent tried to assist the interests of oil heat and fueloil. No match for the professionals on hand to represent the gas heat interests, the local talent of oilburner and fueloil companies came out very much second best.

D — The new fuel-burning equipment requirements came out in a form which precisely suited the gas interests. These requirements provided enormously valuable new advantages for gas heat men, and provided new and expensive obstacles for oil heat men.

Improvements for local oil heat men in such situations are being promised and planned. Ability of a calibre for oil heat work on a national level is needed — in every local and state instance which includes top-level gas heat men doing their very capable best work to belittle oil heat and strike it damaging blows.

History of Improvements

The history of oilheating includes a series of many steps to improve it. A brief run-through of some of the important advancements of the past helps to think ahead to the technical improvements which should help the future of oilheating the most.

For many years since it was published in 1926, the textbook *Fuels and Their Combustion,* by Haslam and Russell has had a terrific effect on the oil heat industry. It covered all fuels, but had great, good influence particularly among the serious minded men who worked at developing, designing, and improving oilburners. Often I've referred to this book as the bible on combustion; and never has anyone commented on this except to agree.

Once the early oilburners were nearly foolproof, the best men working on them, at dealer level as well as the manufacturer level, wanted the burners as highly efficient and smoke-free as they could be on a practical basis, hence turned to the use of combustion testing instruments including the CO_2 tester, draft gage, and stack thermometer.

In the late 1920's and early 1930's, Percy Fansler advanced oil heat greatly by preparing magazine articles on combustion tests of domestic oilburners — on the necessity of such tests, if performance and efficiency were to be really good.

They were illustrated by photographs of the combustion testing instruments then being made for oilburner men by the Hays Corporation, which to sell the instruments did much educational work in the oilburner field.

Harry F. Tapp set the industry ahead many years by writing the *Handbook of Oil Burning* in 1931 under the auspices of the American Oil Burner Association . . . I treasure my autographed copy today.

The orsat type gas analyzer first was used to measure the CO_2 content of flue gases. It was used so widely that some burner men wrongly called all CO_2 testers "orsats" — an error which, in fact, I recently found in a manufacturer's new manual on rotary-cup burners.

The development of smoke-checking instruments using the Shell-Bacharach scale, which for the first time produced a numerical evaluation of smoke from a portable instrument, was a milestone in oilheating — which had particular significance in efforts at minimizing air pollution.

Another aid in this direction came along in the form of the delayed-opening oil valve for pressure burners. It makes for decidedly more soot-free oilburner start-ups and shut-downs.

Draft inducers, as separate units for all sizes of furnaces and boilers, and as integral parts of oil-furnaces and oil-boilers, become known for assisting in gaining particularly high efficiencies together with operation especially free of any traces of smoke and soot. Thus draft inducers can help efforts to avoid air pollution.

Fireboxes or combustion chambers especially well designed and made of special material which heats up rapidly are of great value in the direction of clean, soot-free and smoke-free combustion.

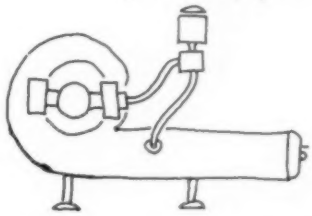
What is needed now?

What is needed most right now to improve oil heat's relation to the lively, national air pollution situation?

From my daily experiences on oil-burner installations, I can pinpoint two immediate needs.

Every Pressure Burner needs

Delayed-Opening Oil Valve



First, to improve domestic oil heat as to pollution of air within homes — and inside air is decidedly more important than outside air — we need oil-furnaces and oil-burners which are hermetically sealed so that no soot specks can escape through cracks and crevices, around doors for example, when a gun burner lights off and produces its flame start-up concussion.

Impatient with blowing soot specks from jackets of oilfired furnaces and boilers before I take photographs, I desire such tightness in a boiler or furnace that, with its gun-tube opening plugged, it can be filled with water without losing any through crevices.

The second, immediate need I see with relation to air pollution has to do with No. 6 commercial-industrial burners as usually found today heating apartment houses and other large buildings.

These burners, as found in use today, have a great need for more and better oil preheating equipment. For a start-up with its boiler cold, such a burner needs preheating equipment of design and capacity to provide, from the moment the burner starts, fueloil at 120°F. for the oil pump on the job, and fueloil at 160°F. for the burner's atomizing cup. During normal operation, a typical burner of this kind may work best with its cup-line fueloil heated to 160°F. To face a fact, we must admit the air of our cities would be cleaner if typical rotary-cup burners started better with their boilers cold, and in normal running atomized and fueloil better . . . helped by higher temperature of the oil to be atomized.

Movable Oil Heat Units can build Oil Volume

MOVABLE OR PORTABLE oil heaters are not a novelty. For years they have been used to warm up construction jobs, provide temporary heat at camps and do miscellaneous lighter jobs around farms, warehouses, repair shops and the like. Yet it has only been recently that their popularity has increased to the point that they become quite significant to the fueloil distributors.

They are most often sold through building supply or farm supply houses or through the mail order catalogs like Wards or Sears. But there is no reason why they can't be marketed just as well, perhaps better, by oil companies in rural or small city areas.

The majority of the units on the market have mechanical burners designed for burning No. 2 or diesel oil, but since they work just as well with No. 1 or kerosene many of them run on that fuel. Kero is often easier to get and to move about in small quantities when it's inconvenient to have a regular supply tank.

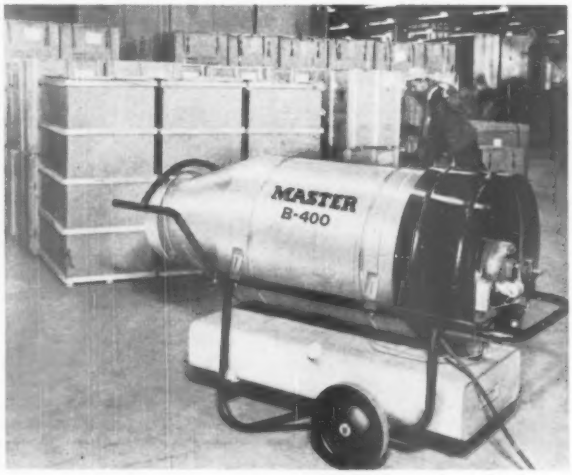
These movable heaters have fuel tanks in their base structures in the popular sizes which range from 50,000 to 400,000 Btu output. Above that point they will more likely need a separate tank on a trailer.

In a brief roundup of these products, planned to show oil men something else to promote to build volume, five manufacturers were visited or heard from. Listed alphabetically, these were Champion Mfg. Co., St. Louis; Master Vibrator Co., Dayton, Ohio; Silent Glow Oil Burner Co., Hartford, Conn.; Stow Mfg. Co., Binghamton, N.Y.; and Thor Power Tool Co., Aurora, Ill.

These units are typically smokeless and reasonably odorless. One Champion unit and the larger Silent Glow units are designed for stack connections with indirect operation.

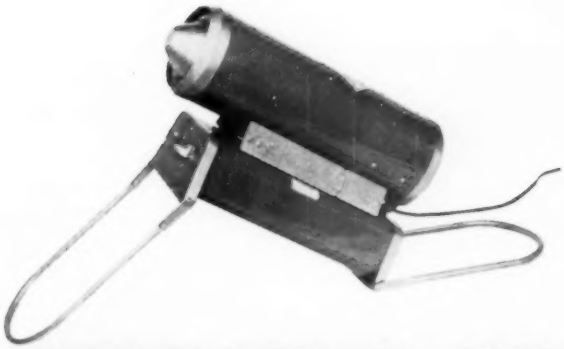
The Champion heater below has 120,000 Btu output and provision for a stack outlet. The unit at left reaches 200,000 Btu, has a circulating blower feature.

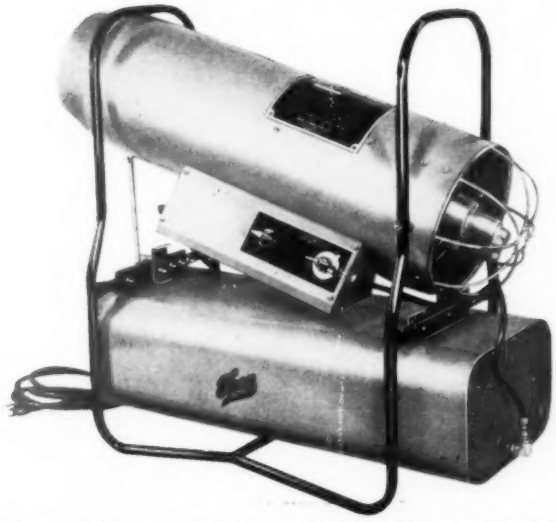
Master heaters in three sizes are shown working at typical jobs, heating a loading platform, a warehouse, a highway maintenance shop, and greenhouse standby heat. They are all using the new Gulf burner.



The Silent Glow unit shown at the right has adjustable supports that permit angular firing, perhaps to warm up a tractor. It's an 85,000 Btu capacity unit but can be turned down to 35,000.

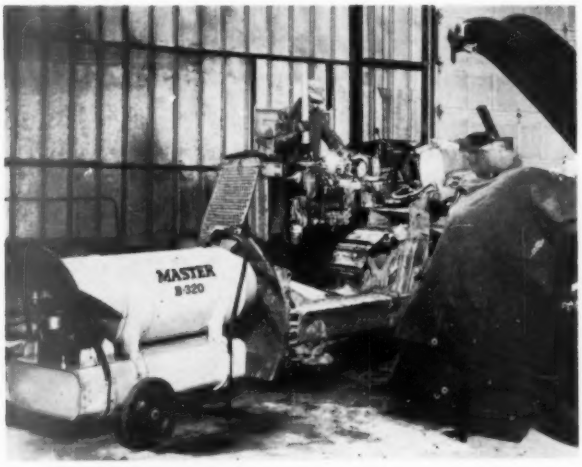
Their 100/200,000 Btu heater (below) is on wheels, as in the large unit pictured in the plant's parking lot.





Thor provides an adjustable angle unit with output of 70-125,000 Btu.

The Stow heater has a wide range, from 20,000 to 80,000 Btu capacity.



Why convert Gas to Oil?

New Jersey Apartments only two years old switch for several Reasons

by Robert Tewalt

EASTERN OF NEW JERSEY, Inc. one of our local fueloil distributors who also maintains an oilburner and boiler installation and service department, last month converted Rose Tree Gardens of Ridgefield, N.J., an 80 family garden apartment, from gas to oil heat.

To the best of our knowledge this is the first time such a conversion has been made in the state of New Jersey, and as a matter of fact, we have not heard of such a conversion being made anywhere. This writer just returned from a personal inspection of this new conversion job and it proved to be one of the most gratifying visits he has ever made to a boiler room.

When originally placed in operation two years ago this project was equipped with gas for cooking, for heating, for domestic hot water and for a battery of three clothes dryers. Now, in changing to oil heat, a number of factors were studied . . . economy, price stability, cleanliness, space requirement, noise and financing.

Economy, of course, was the most compelling factor and in this case the owner includes in the rent the cost of gas for cooking and making heat and domestic hot water. The owner provides and maintains three gas fired clothes dryers but the tenants pay for the use of these dryers through a coin machine attached to each dryer.

Aside from the estimated cost of conversion, the current going price of fueloil and the utility company's published gas rates, the only known factor at the outset was that the owner during the last 12 month period of operation had paid gas bills totaling $13,500. To convert this project from gas to oil for generating heat and hot water, consideration had to be given to the fact that the owner will have to continue to buy gas for cooking and clothes drying at a somewhat higher rate than he is now paying because of the larger volume formerly used.

All of the gas being used passes through two meters but there was no way of knowing just how much was being used for each type of service.

According to data published by the American Gas Association an average family of four people would use nine therms per month for cooking. Using this figure 80 families would use 720 therms per month and applying the local published gas rates for residential service this would amount to $87.60 per month or $1061 per year.

However, instead of using these figures the company in making the original presentation, desiring to be extremely conservative, estimated that the owner would spend $2,000 per year for cooking and clothes drying gas. Again in an effort to be quite conservative, the installer estimated fueloil costs at 10¢ per gallon and a consumption of 75,000 gallons of No. 4 fuel oil annually. While these figures include the extra cost of energy for operating the oilburners and also such extra cost as there may be for oilburner and boiler maintenance over gas, they would appear to be quite conservative.

In making this conversion from gas to oil one may observe by the photographs that the same forced draft blowers and electric motors are being used for the oil firing as were used for the gas firing, and while a utility representative is alleged to have dwelt heavily on the cost of extra electric energy to operate the oil fired equipment, the actual cost of energy to operate the three-quarter horse power motor attached to each of the two burners will approximate only $75 annually.

Based upon the foregoing, the owner stands to realize a saving of $4,000 per year on his fuel and boiler room operation costs. This tidy sum is equivalent of an annual increase of $50 per year in the rent of each of the 80 families. The only difference is that this increase comes out of the pocket of the utility instead of out of the pockets of the tenants.

As to the estimated amount of oil to be consumed—I wish I had as good a chance to stay in good health and live to be a hundred as this owner has of bettering that estimate by as much as 5000 gallons.

Another point frequently stressed by the utility people is smaller space requirements for gas fired boilers and gas firing equipment. Accompanying this article are photographs of the boiler room, before and after this conversion. An examination of these pictures will disclose that the same 608 sq. ft. U.S. National boilers are being used and the space actually used to accommodate the oilburners and oil piping is less than the space required for the gas burners and gas piping. Another factor concerns the 10,000 gallon oil tank being buried outside of the building and, of course, it takes no inside space.

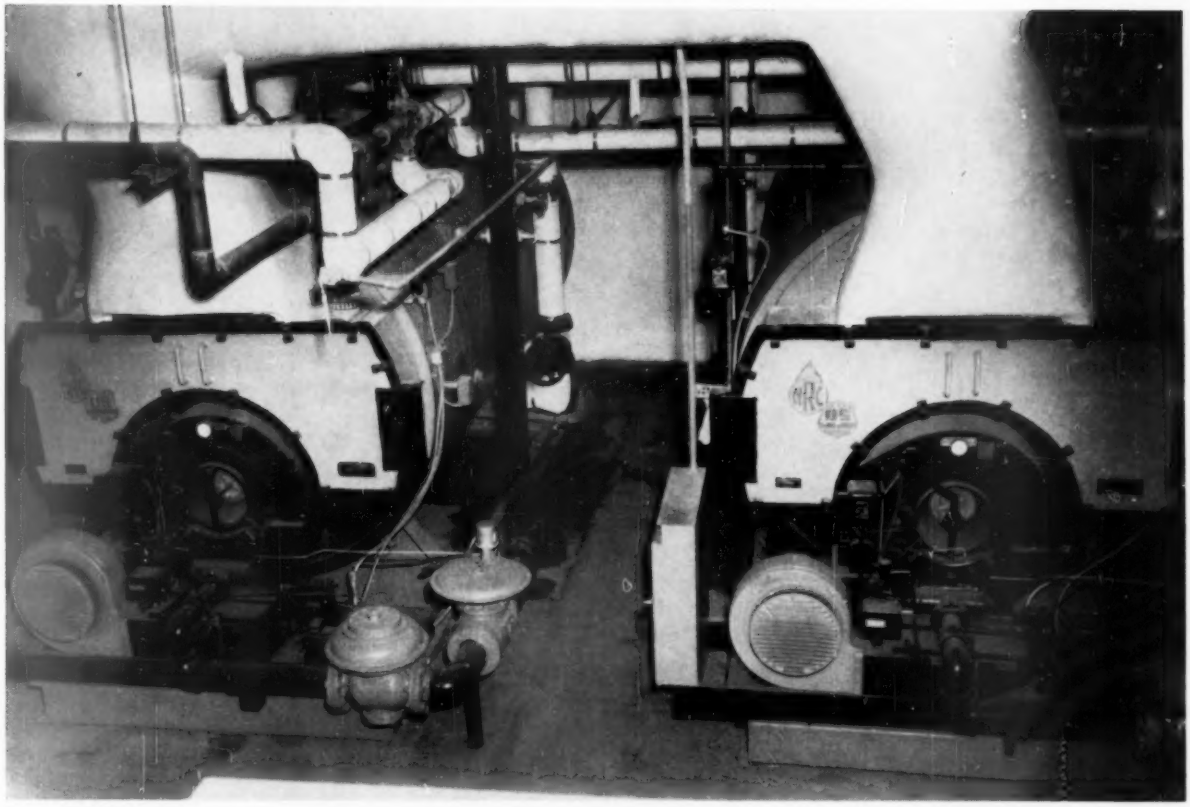
Another item worthy of note. The

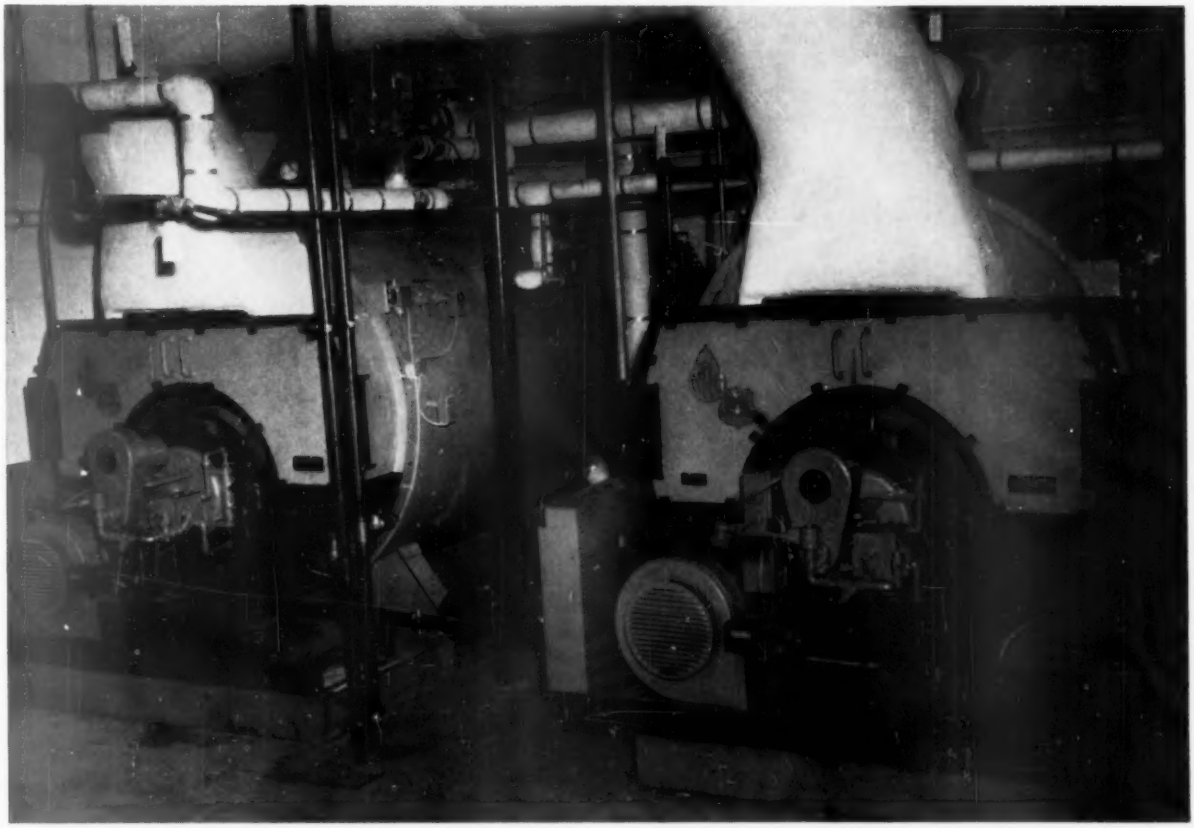
On the question of cleanliness the owner was simply shown a statement contained in an economic fuel survey recently made by Engineers, Inc. of Newark, N.J., which reads as follows:

All of the automatic heating systems (gas, electric and oil) are clean and convenient.

Of these systems, both gas and oil are burned in an enclosed chamber furnace and, therefore, their relative cleanliness can be considered as equal.

However, people often view dark stains, which appear on the walls adjacent to, or above, heating radiators, as an indication of heating dirt. This is a common misconception, since stains of this type are caused by the deposit of the dirt in the air flowing up and over a warm radiator and is readily deposited on the wall surface. Stains of this type increase in direct proportion to the dirt in the air and the amount of air movement past the radiator. Most of the dirt deposited is from smoking (cigarettes, cigars, etc.) and dust and lint coated with greases given off from cooking in kitchens.





Twin boilers at Rose Tree Gardens fired with gas when new two years ago are now converted to oil for an expected saving of $4,000 a year. The oilburners are quieter by actual decibel measurement, and the oil piping takes less floor space.

utility folks place special emphasis upon the quietness of gas fired as compared to oil fired burning equipment. When this conversion was being made one oil burner was installed and placed under fire before the other gas burner was removed. By firing one burner and then the other, they ascertained by the use of a sound measuring device that the oilburner operated at a sound level 15% below the gas burner.

On price stability the owner's attention was directed to the fact that the U.S. Government Bureau of Labor Statistics shows indices for wholesale fuel prices as of July, 1960, compared with a base of January 1958 equaling 100 as follows:

Bituminous Coal	96.
Anthracite Coal	93.
Natural Gas	125.
Electricity (commercial)	102.
Distillate Fuel Oils (Fuel Oil No. 2)	89.5
Residual Fuel Oils (Commercial grades)	87.

His attention was further directed to the general belief that natural gas prices will rise sharply and also to an item in the September 1959 issue of Fortune Magazine which stated that it was the conviction of the gas producers' themselves: "that the price of natural gas is unconscionably 'low' and should be raised . . . Gas prices, unlike those of oil which both rise and fall, have never shown a disposition to go anywhere but up."

When it came to financing, this installer, who happens to be supplying fueloil to the owner in other apartments, reminded him that by converting to oil, not only would he have the opportunity to choose his supplier but that he would also buy his fuel on open account with extended credit terms when as and if needed. Whereas with the utility company not only did he have to pay his fuel bills upon presentation but he had to keep on deposit with the utility $2500 as a guarantee that his bills would be paid when due. It was also suggested that he withdraw $2000 of this deposit and use it as a down payment on the conversion to oil which was to cost him $6000 and the savings on his fuel bills during the first year would offset the remainder of the conversion cost.

Equipment Allowance Program expands in Pacific Northwest

by Robert Gray

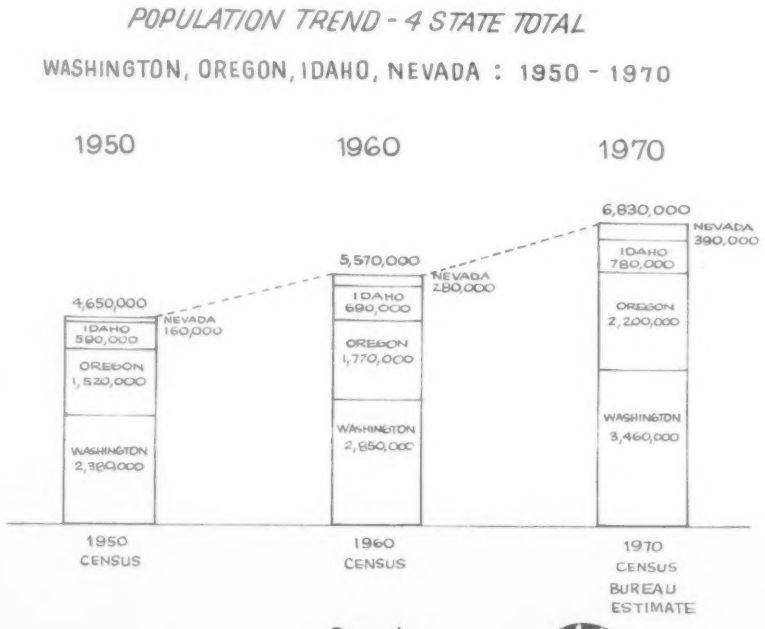
IT HAS NOW become an established pattern for the Regional Advisory Committee, Oil Heat Institute of the Pacific Northwest, to meet in October to study the results of its Equipment Allowance Program during the first three-quarters of the year. Based on this knowledge a plan is proposed for the year ahead, in time for the supplying companies to consider it for their forthcoming budget.

In the nine months of this year to September 30, a total of 6,948 oilheating installations were assisted financially. In addition, help was given in connection with 164 tank replacements and 66 furnace replacements. The total commitments for these projects came to $594,227, of which $517,458 had been paid out by the date indicated. In the same period refiners had paid into the fund $639,957 and there was a closing balance of $122,499. Most of this balance, or $76,769, was already pledged in the unpaid commitments, so the actual available balance was $45,730. More would be needed in the fourth quarter or commitments deferred.

To review a few points reported in earlier issues . . . all of the refiners supplying light heating oil to the area pay into a central fund 1/10¢ a gallon of their sales. This deposit can be tapped by the office of the Budget Director at a maximum rate of $82.50 per installation to help defray the added expense of oilheating equipment in areas where competitive automatic fuels are active. This money can only go to the refiner's own marketing outlets as they make or sponsor oilheating installations.

In addition to the $82.50 cash from the refiner the local oil man supplies an equivalent value in lower equipment pricing, sales expense, or cash.

The assistance given on tank replacements is an interesting project. The States of Washington and Oregon have many 675 gallon buried tanks. To replace one that wears out involves some $150. If the customer lives in an area where the gas utility is offering to install rental burners at $1.95 a month, the tank failure makes the gas rental offer look inviting and it has proven a critical point at which to lose oil customers. Under the EAP method, the dealer gets $50 cash as-



Consumer Attitude Survey
Seattle, Portland, Spokane

	Heating Fuel Rating		
	Oil	*Gas*	*Elec.*
Most economical to operate	1	2	3
Cleanest heating	3	2	1
Safest heating	2	3	1
Most reliable heating	1	3	2
Most convenient heating	2	3	1
Most preferred by consumers	1	3	2
* * *			
Ratio of present users	70%	24%	6%

In the three cities 79% have central heating, and 21% use space heaters.

Checking the age of all present heating installations it was learned that:

8% are over 20 years old
7% are from 16 to 20 years old
14% are from 11 to 15 years old
30% are from 6 to 10 years old
41% are from 0 to 5 years old.

Regional Advisory Committee, OHI of the Pacific Northwest, meeting at Monterey to study and approve the 1962 program. At center of the head table is M. N. Vining who has been chairman of the group since its start. Al Loucks of Salem, Oregon, was re-elected vice-chairman and Robert G. Elmslie is again budget director to administer the funds.

sistance from the central kitty to help on the cost, and the dealer puts in a similar amount.

There were 66 grants for furnace replacements, too. Here the circumstances were similar and the same allowance was given as on a new installation or $82.50. Both of these latter type contributions represent a very minor phase of the program and are emergency expedients.

For 1962 the Council has asked the refiners to double the rate of deposit in the assurance that this will result in twice as many installations. In other words, the refiners would increase their support but the equipment allowance on the individual house would remain at the present $82.50.

There is in the Northwest, as in many other parts of the country, a substantial difference between consumer preference for fuels and what they actually use to heat their homes. In builder developments where the buyer has no choice of fuel, he nonetheless will not refuse to buy if he likes the house otherwise. An interesting comparison in fuel choices has been made this year in a builder and consumer survey.

The builder developments studied accounted for 16,000 homes, and of these 29% had oil, 38% had gas heat, and 33% had electric heat. At the same time a group of 2,200 homes built individually by their owners had 70% oil heat, only 18% gas, and 12% electric. This supports the view that equipment allowances to builders of the Northwest will enable them to supply oil which appears to be the preference among individuals.

In addition to offering the builder some dollar help for oil installations, he can also be given advertising allowances from an entirely different fund — the regular promotional campaign which has done a big advertising job for eleven years. Where the builder advertises oil heat in his homes along lines approved by OHI he can get $25 per house to help his ad costs.

Again this year the group held a seminar for builders in the Chinook Hotel at Yakima. A special train from Seattle took a large group of builders and realtors on the morning of November 28 and brought them back late on the 29th. There were numerous speakers and discussion groups, but the headliner was Neal J. Hardy, Commissioner of the Federal Housing Authority, Washington.

As a guide to future direction of the campaigns, frequent consumer attitude surveys are made. Impressions gained in the latest one are shown in an accompanying table. Oil did fairly well although electric heat made a stronger showing than its present share of the three cities would call for. Gas took the low spot in four of the six measurements.

Pacific Northwest
Cumulative Report Jan. 1 – Sept. 30, 1961

	Units Committments						Dollars Committments	Status of Total Cash Funds		
	Spec. Homes	Private Homes	Conversions	Total	*Replacement* Tank	*Replacement* Furnace		Received	Paid Out	Balance
Chapters:										
OHI of Inland Empire	28	62	164	254	0	13	$21,024	$62,521	$32,171	$30,350
OHI of Northern Nevada	126	66	13	205	0	0	16,522	9,798	6,828	2,970
OHI of Southern Idaho	11	10	8	29	0	0	2,174	8,738	2,634	6,104
OHI of Oregon	606	796	1036	2438	0	0	198,015	211,845	176,772	35,073
OHI of Washington	1700	1376	946	4022	164	53	356,491	347,055	299,053	48,002
Cumulative Total	2471	2310	2167	6948	164	66	$594,227	$639,957	$517,458	$122,499

Is Joint Burner Service Logical?

A Story of Three Ventures in Washington State and their Results

by V. M. Douglas

PERHAPS you think of burner service as a necessary evil. Everybody agrees that it is necessary.

There were times in the past when the customer did not have a good word to say for oilburner service. He associated it with unpleasant smells, a cold house, a dirty man making a mess in the basement, and finally a bill to pay.

Service Headaches

In those same times the burner dealer took a certain delight in installing a new burner, with everything neat and clean. He could expect a profit, a happy customer, and all was well,—until there were calls for service. Then came the headaches. The customer expected the serviceman to be on the job within ten minutes after the call—he might have made it in thirty minutes, but the caller was sure two hours had elapsed. Even though the service department had asked all the routine questions before sending the serviceman out, it was often a case of a thermostat being turned back, or an empty oil tank. And how the customer hated to pay for an hour's time when the man was on the job for only a few minutes.

Those days gradually disappeared, or became less troublesome. Burners and controls were improved. Fueloil was cleaner. Automatic fill of tanks became the rule. Radio dispatching insured a faster response. Clean uniforms eliminated much of the dirty serviceman concept. Quietly operating, unseen within the jacket of furnace or boiler, the oilburner changed from the demon in the basement to the little friend which is responsible for the perfect comfort.

Why then, does anyone think of burner service as a necessary evil? It is because even the best of burners are still mechanical devices. Provisions must be made to insure minimum interruption of the comfort they afford. For the same reason that service facilities are maintained for the finest automobiles, costing thousands of dollars, so, an oilburner will not operate indefinitely without attention.

Within the last few years a number of methods other than establishing burner service have been tried. Cooperative service has given promise that, under some circumstances, it may be the answer to this problem.

One approach to the idea was incorporated in an article in the July 1960 issue of FUELOIL & OIL HEAT entitled "Quartet in Close Harmony".

In the State of Washington at least three, if not more, attempts have been made to establish cooperative service. This is the way it was told to us: In Bellingham, an effort was made to have a cooperative service department under the jurisdiction of several fuel-oil dealers. After the completion of one heating season, 1960-1961, they were not completely sold on the idea, but decided to try it again. An abnormally warm winter may have been responsible for less service demands than they had contemplated. One of the mistakes they discovered was that provision had not been made to keep their one man service department busy through the entire year. Working on a salary basis, it was his obligation to answer service calls as relayed to him by the oil companies—period. It so happened that he was not kept busy, so they felt that they were paying a premium price for their cooperative service. No arrangements had been made for him to develop any work for himself. When this one man service department was injured, the cooperative service came to an end. Those who sponsored the idea did not blame anyone but themselves, but think their mistakes have been educational, and that another year will demonstrate the fundamental soundness of cooperative service.

In Everett, Wash., Paul Kinnune, H. O. Seiffert Co., had a more encouraging story of the experience there. There had been four oil companies in the initial trial. Two of them had dropped out.

The one man service department has service requests relayed to him from the oil companies. His only paperwork consists of a report on each call which shows the time, material and his charge. These are turned in to H. O. Seiffert Company, where the bookkeeping and billing is done.

Even though the operation is relatively small, because of the present participation of only two companies, the principles have been found to be sound. Both companies and the service man are pleased with the results. Much of the satisfaction is due to active promotion of Annual Preventive Maintenance Agreements and Summer Service Check policy. At Mid-summer the service department had more than a month of work ahead on the Summer Check program.

Accounting in Black

The oil companies were scarcely aware that service work was being done for their customers, other than what was revealed by the accounting, and that was entirely in the black.

Over in Eastern Washington, G. A. (Jerry) Tooley, Union Oil Co. and Glenn N. Felton, Standard Oil, explained the operation of Tri-City Heating Oil Dealers. Tri-Cities in this instance include Pasco, Kennewick and Richland. Located close together on the Columbia river these cities had an organized group of about 20 oil dealers designated as Tri-City Heating Oil Dealers, Inc. They incorporated as a group in 1945 primarily for self protection in the matter of credit. It did not take long to get poor-pay accounts on a cash basis.

With this limited introduction, we will let Glenn Felton tell of their service problem, and how they solved it. "As time went on, competition—electricity and recently gas—caused us to see the need for more service to our heating oil customers, especially in the line of service to oilburners. Up until this time the only servicemen were from the local furnace dealers, and they were not trained to actually service oilburners, nor were they interested in the actual servicing. None of

the dealers selling furnaces had enough business in service work that they could afford trucks and men equipped to take care of our oilburning customers. So from the nucleus we had through the Tri-City Dealers, Inc., we established a new organization, namely, Oil Burner Service Tri-Cities, Inc.

"In order to make this new organization workable, we sold common stock to each member for $100 a share. No fuel dealer could own more than one share of stock. Each share of stock was entitled to one vote, regardless of the size of the fuel dealer. We elected officers, and a Board of Directors, who have operated the firm for the members since July of 1960.

"We bought two service trucks and hired one man to run the operation, who happened to be a graduate of the oilburner school of Seattle, sponsored by the Oil Heat Institute. Each dealer who belonged to Oil Burner Service, sent an oilburner service form letter to each one of his good customers, announcing the service.

"As an introductory service, they were offered a winter checkup at a special price of $10.95. To show the extreme need of this type of service, we were flooded with requests, and, even though we hired another man, we were unable to take care of all the requests for pre-winter checkups.

"We continued to operate this business during the winter of 1960-1961 and had wonderful success. The customers were happy with our service, there were no complaints as to our charges, and although we had our problems, they were mainly because we were underfinanced, we came through on a break-even basis. This was really more than we had anticipated.

"We then could see that in order to operate the firm right, we had to have more finances, so we contacted two servicemen in Portland, who happened to be brothers, and who were anxious to get in business for themselves, who had money enough to start a business.

"In July of 1961 we sold them the Oil Burner Service with the understanding that they would carry on the business the same as we had, only expand it by installing both conversion and new burners. We believed this would enable them to give better service than we had been giving. The arrangement would also relieve the oil dealers of the responsibility as to the operation of the firm and the financing of it.

"We will continue to work with this new operation just the same as if we owned it. We need their services, and they need our help in developing their business. These two men have had over 15 years experience in the oilburner business.

"In February 1961, we sent to all our good customers, by this we mean credit wise, a summer checkup special for the price of $10.95, and we received very good responses. These have kept our men busy all summer long on checkups, which we believe to be not only a good service to our customers, but it takes care of the salaries and expenses during the summer months. It also relieves the pressure in the fall when the oilburners are started.

"We as fueloil dealers have assisted the Oil Burner Service in advertising and in any other manner that we think will be helpful to the heating oil business of the Tri-City area.

"We have accomplished what we started to do, which was to furnish oil heat with a minimum of worry and trouble to the customer."

This cooperative oilburner service is meeting with favor. It is reasonable to suppose that there will be changes in methods, but the fact that they are continuing the co-op idea in both small and relatively large operations, indicates that it can be considered workable.

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Honeywell's cadmium sulfide cell Primary Controls

HONEYWELL'S new primary controls for domestic oilburners using cadmium sulfide cell, have the following technical story behind them as told by their admirers.

Cadmium sulfide cells have been manufactured for several years, Honeywell men point out. But, say these men, such cells have become practical for oilburner flame detection only as the result of recent improvements. Honeywell's Applied Research Department was investigating cad cells as early as 1956, but at that time found that the electrical resistance of the available cells was unsuitable for oilburner applications. Cell manufacturers then solved the problem, and Honeywell started developing primary controls which included cad cells.

With suitable voltage applied to it, the cadmium sulfide cell which sees no light provides great resistance to a flow of current through itself, through the cell. In darkness, the cell acts as an insulator because the electrons in its light-sensitive material all are bound to the material's crystals, thus are not free for the conduction of electricity. When the cell "sees" light, the energy of the light instantly releases the electrons from the crystals with the result that the cell then conducts electricity.

Interestingly, the cad cell responds well to the light rays from the flame of an atomizing oilburner, but does not respond to the blue flame of a gas burner. Honeywell engineers say, "The cell is not materially affected by rays from red-hot refractory."

The heart of the cad cell is a ceramic disc coated with cadmium sulfide. On the sulfide is a conductive grid in a geometric "S" shaped pattern. In a small space, this gives the effect of two bare wires a few inches long, parallel, and a small distance apart — with cadmium sulfide between the wires and in contact with them. Each of the cell's two connections goes, in effect, to one of the wires.

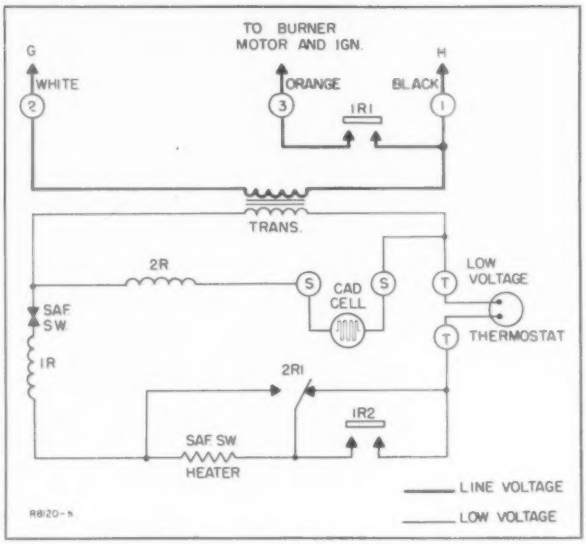
As Honeywell does things, the entire cell assembly is hermetically sealed in glass just as an electronic tube is. At the time of sealing, the cell is first evacuated, then is filled with clean dry air.

The amount of sulfide in a cell must match the sensitive relay or "flame relay" used with the cell. Honeywell's sensitive relay pulls in when the resistance of the cell drops below approximately 1,500 ohms.

The glass-to-glass hermetic seal is greatly important, Honeywell engineers declare, because moisture, which can come from humid air, deteriorates cadmium sulfide. Glass sealing is an expensive process, these engineers admit, but they point out that they have proof that the use of inexpensive "potting" seals such as plastic or epoxy allows moisture to diffuse through and to reach the sulfide — in a short time in some instances. Moisture affected, a cell has increased resistance, which prevents the flame relay from pulling in; the result is nuisance shut-downs of the oilburner "on safety", a trouble which must be corrected by a serviceman.

Excessive ambient temperature for the cell, which in actual practice poses no problem, does have the same deteriorating effect on the cell as moisture reaching the sulfide. Because most cells will be located in or near the blower housings of gun-type oil burners, where temperatures are low, the temperature limitations are more interesting than important. The steady-state maximum temperature is 120°F., the short-term maximum is 140°F.

Honeywell's C554 flame detector assembly includes a two-piece socket and receptacle arrangement easily installed in a blower housing or the blower end of a gun tube. The receptacle part can be permanently mounted in a blower housing either with 8-32 screws in tapped holes which are provided, or with 10-32 screws through a slot.



The socket assembly contains the cad cell, and can be simply unplugged from the receptacle for inspection.

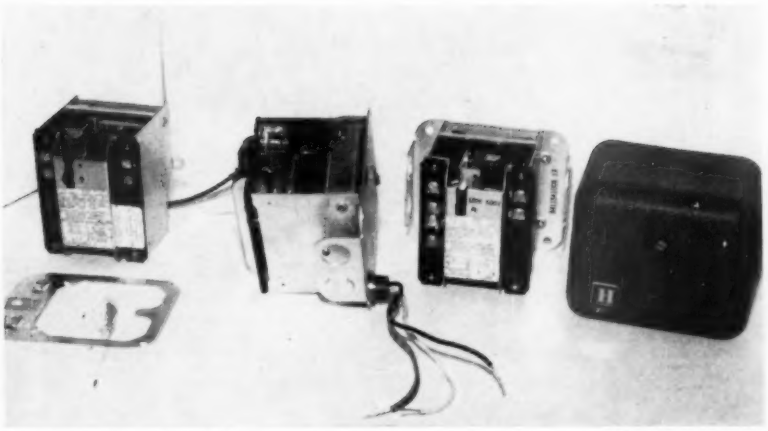
The two lead wires of the C554 are color-coded blue — different from other colors commonly used for wires. They are low voltage, but are Class 1, thus may be located adjacent to line-voltage wires without additional insulation or barriers.

The second component new in the Honeywell cad cell system is a sensitive relay, a flame relay, connected to and controlled by the cell. This has single-pole, double-throw contacts to provide the switching needed for sequencing the other component parts of the oilburner primary control.

Such little electrical power operates this sensitive relay that the contact blades cannot be designed for much press-back (force on contacts). Therefore if ordinary contacts were used, dust or dirt or contamination could cause an open circuit between contacts in their closed position.

Honeywell fell back on its vast experience with millivoltage equipment and electronic check relays — to design contacts 100% workable and practical for this low-power relay. The result was "bifurcated" contacts, to

Don Reilly, Honeywell sales engineer, Union, N.J., along with other Honeywell men, is proud of the fact that every bit of material going into their cadmium sulfide cell set-ups is made in the United States.



At the left is a chassis, less case and cover . . . a low-voltage model with lead wires for its line-voltage connections, and with terminal strips for its low-voltage connections. Below it is an adapter plate for mounting it on a 4" square junction box. All of the space in the 4" box can be used for spliced wires, as the control does not extend into the box, does not occupy box space.

Next to the left-hand chassis is a cad cell chassis mounted in a special case with a quick-mount arrangement for oilburner manufacturers. This chassis is a modification of the chassis on the extreme left.

Third chassis from the left is a line-voltage model with terminal strips for all line-voltage connections and for the cell's low-voltage connections.

The cover, at the extreme right, is available for all the chassis shown here — is the size of an ignition-transformer case.

use the Honeywell word for it . . . which simply means divided into two channels or forked.

Each pole of the relay consists of two small rods at right angles to each other. This construction provides point-to-point contact, the maximum force per unit of contact area possible with the low press-back blades, the minimum area on which dust can accumulate, and a sloping area from which dust will slide.

In addition, each contact set consists of two sets of rods to provide two paths for the electricity supposed to flow when the relay is snapped in. The two electrical paths provide an excellent statistically low probability of failure.

For example, Honeywell engineers point out, if they can expect a single set of contacts to fail 1% or 1/100 of the time, they can expect two, parallel sets of contacts to fail 1% of 1% of the time — which is 1/100% or 1/10,000 of the time.

During severe dust-chamber tests made for comparison, commonly used contacts which were dome-shaped and of the single-contact type produced approximately three failures per 50 operations of the relay. In the same test, the new kind of bifurcated contacts went through more than 85,000 operations of the relay without one failure. Not satisfied yet with these originally designed contacts, Honeywell engineers provided a dust cover for the sensitive relay as added insurance against trouble with their cad cell primary controls for domestic oilburners.

Honeywell uses three different circuits for its cad cell primary controls — to provide one line-voltage control-circuit primary control, one control with a low-voltage circuit and suitable for constant ignition, and one control with a low-voltage circuit and suitable for intermittent ignition.

The two low-voltage cad cell primary controls use circuits similar to those of the well known R866 and R867 Protectorelays — the one difference lying in the use of the cad cell and its flame relay in place of such a thermal flame indicator is the C550. The cad cell primary control which uses only line-voltage controls (has no low-voltage thermostat circuit) uses circuitry similar to that of the R494 Protectorelay — with only one important difference.

Honeywell puts the cad cell and the flame relay in a low-voltage circuit for several reasons, which it gives as follows. Transient voltages created by inductive kicks are at a low level, in a low-voltage circuit, and are low enough for the cell to handle. Tests on line-voltage set-ups proved their transient voltages were so high as to require the use of complicated capacitor-diode discharge networks. In addition to raising the costs of the primary controls, Honeywell says, the networks would include components which would increase probabilities of failure of the primary controls.

They used alternating current for the cell and flame-relay circuit, Honeywell engineers explain, both to eliminate the need for a rectifier network, and to eliminate the possibilities of polarizing the cell by use of DC. They again think in terms of unnecessary components — saying the rectifying equipment would increase first cost of equipment, and would increase probabilities of failures.

The cad cell line-voltage primary control (which has no low-voltage room-thermostat circuit) contains no low-voltage transformer, yet uses the same low-voltage cadmium sulfide cell as is used by the two cad cell set-ups which have low-voltage thermostat circuits. In the line-voltage control, low voltage for the cell circuit comes from a voltage splitter arrangement or voltage divider network. Use of this idea, Honeywell men point out, gives to the cell circuit all the low-voltage advantages which have been described —and also permits using just one kind of cad cell for the three cad cell primary controls now being produced.

Service Saga

Some reflections after 30 years of working with the Public, and its Heating

Edit. note. The function of a business magazine is to inform and instruct its readers to help them run their operations — not to entertain. This story, however, is an exception — it entertains, does not instruct. Perhaps it best fits an issue coming at the Holiday Season.

Here the serviceman narrator touches as much on the ethics of his profession as he does on the technical aspects. He talks mostly of the past and enables us to appreciate how far we have come in making our oilburner service an asset. The typical fuel-oil-heating dealer today appreciates the value of a satisfied customer and uses prompt, efficient and inexpensive oilburner service to keep him that way.

By Steve McCarthy

FOR OBVIOUS REASONS, I shall not pinpoint the different localities where I have worked. Let me just say they have all been West of the Mississippi, and let it go at that.

My experiences have been so varied, in heating, airconditioning, refrigeration and other types of business and household equipment — principally heating — that it would require many pages of printed matter to relate even all of the important ones, consequently I'll confine my comments to a limited number, in the hope that they may prove beneficial to the public, to employers of men engaged in the servicing of equipment in these categories, and to the servicemen as well.

I enjoy helping people out of trouble. That's my game. Art Linkletter speaks the truth when he says "people are funny", but I like most of them just the same. I have found through the years in the service game that it pays to make molehills out of mountains rather than mountains out of molehills, and to be honest with everyone. Don't ever cut the other fellow short, but watch him.

Let me tell you what happens to a guy who has dedicated his life to serving the public. Also what happens to the public when a serviceman goes off the deep end, and I am sorry to have to admit there are far too many of this kind.

If you follow me to the end of this narrative, you will discover that it is not always the serviceman who is the real culprit. Sometimes it is the owner or manager of a business, and, at times, the public itself. Honesty and integrity; deception and fraud; have no territorial limits nor boundaries.

My buddy and I received a service call one day. Responding, we found "No Heat." As we were working on the plant, the frantic landlady came to the furnace room, asking: "What is wrong? Why do you have to do that? How soon will we have some heat?"

My buddy replied: "The segachiate don't strosock with the epidermis and the Finnegan pin is loose, and if you don't get the hell out of here we'll never get it fixed. Furthermore, it's costing you 15¢ for every minute we're on the job." She got!

We soon corrected the trouble — the apartment house had heat, whereupon we proceeded to the next "patient". A serviceman is somewhat like a doctor; he has to respond at all hours; the difference being that the physician or surgeon is dealing in human life — animate beings — whereas the serviceman is working on inanimate objects; still, if the serviceman errs in his diagnosis or repairs, human lives may be, and often are, endangered.

At the start of the second World War, I was instructed to install an oilburning water heater in a private residence. My helper and I did this. The lady of the house owned and operated her own business downtown (western jewelry); her husband already in the Armed Forces. She left the door unlocked — said to go right in. (We did, but after this one experience we refused to respond unless someone in authority was present).

When the job was finished, she called my boss, saying: "My diamond ring is missing and I know one of your men stole it." She added: "My husband bought it for me. Do you know what that thing cost him? $1,500."

The boss sent us back to the residence, accompanied by a law enforcement officer to act as a material witness. Not that he doubted our honesty, for we otherwise would not have been working in these capacities. He decided long beforehand that we could be trusted, even to Fort Knox — of such mettle and integrity are the real men in this line made.

The housewife, upon request, was present when we began our treasure hunt. Do you know where we found the ring? I'll tell you. In the sewer cleanout. She had flushed it down the toilet.

I worked for some time with a real fine fellow. Most of our jobs consisted of lining boilers, fitting pipe, installing oil lines, and so forth. In slack seasons, one of the fill-in jobs was to clean, scale and coat the inside of large hot water storage tanks. Whenever I went into a tank, which had to be done through an oval opening about 14″ x 20″, I always used a commercial type candle for light.

Safety First

A man lying first on his back and then on his stomach on the steam coils in the center of the tank can scale, wash it out and paint the inside of 1,000 gallon unit in about half a day (if he lives). I told this poor guy, "Don't, for heaven's sake, go in there with a drop cord; use a candle". Anyway, I went back to the job one day after lunch and found what was remaining of him, half in and half out of the tank, and the burnt end of the drop cord draped over the ladder. Whenever moisture in any form is present and electricity is involved, with improper insulation, the net result is an arc or flash. My friend was the flash.

About 3:00 P.M. one day my boss called me to the phone. He said: "I can't handle this; you talk to this guy."

The man on the other end was the constable of a town in the eastern part of the State, who had purchased a 20-ft. freeze box from my boss, and it was inoperative.

He said: "I'll give you two hours to get here, and that's all". "If not, you can take your box, and you know what you can do with it."

I said: "I will do my best. It's 90 miles to your place; the temperature is now −23°; the wind at almost 30 knots, and there is one foot of snow on the ground."

I made it in 2½ hours, and do you know what I found? The cord from his freeze box was lying on the floor, disconnected, and in plain sight — all that was wrong. I said to him: "Mr. Blank, constable or not, I have probably neglected those who really needed my help, and you are going to pay this service charge, or else. With such a low outside temperature, all you had to do was move the contents of the box to some unheated building and not give us the rush act. I will spend at least one hour here to see that there is nothing else wrong, which you will also pay for, plus my travel time." We were paid, at first under protest, followed by an apology.

An employer of mine told me to go to the storehouse and get 25 salamanders and load them in the truck. My question: "What is a salamander?" It turned out to be a device to control frost (by smoke) in an orchard. I set them out at his request and then asked a helper to fill them with 35 gravity stove oil. He got the wrong truck; filled every salamander with high octane gasoline, igniting them before I could stop him.

Guess you know what happened. We had heat instead of smoke and the fruit trees were withered. No crop (Note: This was later cleared up, after much effort and expense, but it didn't save the crop). I guess I was as dumb as my helper, because, to that time, I didn't know what a salamander was.

The next time, I am happy to say, I was sent out in the middle of winter with better than 40 salamanders, and, with the help of some orchard workers, saved a man's crop worth well into the thousands of dollars. For this, my boss charged nothing. He said at the Rotary Club in our community: "We made one mistake and paid for it, but I hope this more than makes up for it". (Note: Practically all of the prune farmers in this area, including the two mentioned, were members of a co-operative growers association, and all debits and credits were handled by the co-op — the salamanders being sent out on a rental basis).

The phone rang at 5:00 A.M. It was the night watchman at the plant where I worked.

He said: "Steve, be here by 7. I have a set of instructions, a helper and a truck waiting."

I dressed, ate and beat it to the plant. The watchman handed me an envelope which would hold a week's newspapers. Pasted to the outside of this was an ordinary letter sized envelope. It read: "Open immediately". I opened it and read this: "Take Truck #4 and helper, tools, passes; necessary equipment and parts have all been loaded for you. Do not, under any circumstances, open large order envelope. Proceed at once to Navy Yard and hand orders and passes to the guard at gate. Proceed from there." We did.

The guard opened the orders, studied them, checked our passes, and said; "Okay, mates, straight down to Pier , turn left, stop at ; you will find the U submarine. Report to chief machinist mate and hand him this instruction." Again, we did.

The mate studied the orders for some time and suddenly said; "Okay,

get started". I replied: "Look, buddy, I have never been on one of these 'fish' before. Where do I begin?"

He said; "In the for'd torpedo hatch, and I'll show you where it is. From there on, you're on your own. I'm busy — here's your blueprints. I can't read 'em. Maybe you can."

I said in reply: "Okay, chief — thanks for your help. We go from here." He showed us the hold and we started work. Our job was to install high pressure tubing. We worked under what I would call very pleasant conditions, receiving the cooperation of various Navy personnel for about seven or eight hours and finished the installation. While working, there had been numerous ships in and about the harbor or anchorage, consequently there was considerable turbulence aboard ship.

Away We Go

We picked up our tools and went amidships and reported to the Skipper who had come aboard some three hours earlier. "Sir, all is secured with new lines in the hold. May we go ashore, or you you wish to make a test first?" His reply: "We may as well test, as you do not have a rowboat, and you couldn't use it if you did, because we are six fathoms deep and 12 miles out. This is a shakedown cruise anyway." We did not know up to this point that we were under way. I said: "For God's sake, my wife is in the hospital, about to nave a baby. She doesn't know where I am. My partner has a wife and five or six kids, and she has no idea where he is. Now what?"

Anyway, the Skipper gave orders to the radio operator and messages were relayed to our wives. We were out four days. We were paid for every minute aboard, treated like kings, and upon arrival at home I found that I was the proud father of an 8½-lb. baby girl. We named her after the submarine's chief mate, using his surname for her given name, it being appropriate for a girl.

The sub's crew sent my wife and baby flowers, gifts and a letter signed by every man aboard.

Would you enjoy paying from $25 to $65 for a part and labor to correct a failure in your heating plant or air-conditioning unit when, if the truth were known, it could have been done in one hour or less, and no parts used? Thousands upon thousands of homeowners and business building owners have been, and are, doing just this. I don't say they enjoy paying the bill; it's just that they have not been, and are not, getting value received.

Let us say, to begin, that this applies to almost any piece of equipment. The customer calls the serviceman or company, with a "No Heat" complaint. A serviceman responds. He goes through what looks like quite a process of checking, testing, etc., and finally reports that he has pinpointed the trouble in the relay, for example.

The natural question is: "Can it be repaired?"

He will no doubt say: "Yes, we can fix it, but it will probably cost you more than an exchange unit. If we take it in for repair, you will be without heat for several hours, whereas I can have the exchange unit in full operation within one to three hours." (This depends upon how far it is to the shop). Prices are based on locality. "The exchange unit, with yours turned in, will amount to $25, plus labor, whereas a new one will cost you about $42.50 plus labor." Here he gets real generous. He says: "Sir, there will be no charge for my time thus far." The customer has to have heat. He wants to save money, so he orders the exchange unit.

Here's what happens:

It takes him less than five minutes to remove the part. Away he goes to the shop. He removes the cover; dunks the relay in a cleaning solution; sandblasts the usually sooted-up element; blows the unit clean with an air gun. He then picks out a newly painted cover that matches your old one. Presto! An exchange unit.

In the event he hasn't a cover in stock, it takes him less than ten minutes to mask your old one and spray-paint it with a fast-drying lacquer.

He takes care of one or two other service calls, which he charges the customer, or customers, for, and two or three hours later, arrives at the job installs the exchange unit; starts the burner. Perhaps it has cost him 8 or 10¢ for a new, or repainted, cover.

The original and only cause of trouble or failure in this case was corrected in a matter of less than five minutes, when he was checking. There wasn't a thing wrong except a little dirt. What he found was a smoke condition caused by lint in the fan. To correct this temporarily (say for a month or two) he merely opened the shutter slightly. This cleared up the fire.

Delighted to again have heat, the customer pays him approximately $35.

His last remark would probably be: "You should have that burner overhauled. It sure needs it. Say around $80. Sure would save you a lot of fuel". Maybe you'll take the bait!

Please understand that I speak of the strictly crooked operator, not with the typical serviceman.

At the other extreme are the dedicated servicemen — here's an example of a conscientious serviceman who did more than normally would be expected to help a customer.

Dedicated Service

On a cold, blustery night, at exactly 11 o'clock, he received a call from a lady with a new-born child. "No Heat" as usually is the case, he dressed, loaded his tools in the truck and took off. At 11:45 P.M. I received a call from him. He said: "Steve, hurry up. Go over to my house, yank my burner out and bring it to me. Don't ask any questions — just hurry". I did as he asked.

We worked diligently for about 45 minutes and connected his burner to her furnace, "in a Rube Goldberg fashion." It didn't fit, but it worked, and the house was warm within an hour. We checked everything and left a very happy woman.

Back at his house, I asked: "My friend, what are you going to do now? Your wife and kids are pretty cold already, and it's going to get colder."

He said: "I'll tell you what. Here's the keys to my shop. There's an old junker there you will recognize. Go get it while I wrangle these oil lines to fit it."

I did, and at 5:00 A.M. we had heat in his house.

His bill for this service? Zero — Absolutely Zero. This was even after permanent repairs and transfer had been made.

Oil Men visit Central Tank Facility with pipeline to Builder Homes

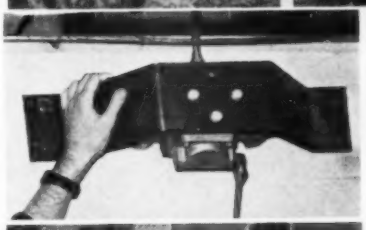
ON OCTOBER 19th at Poughkeepsie, N.Y. the officers of Tri-State Pipe Lines Corp. were hosts to 90 oil men from several Eastern States, to let them learn quite a lot more about the system of metering oil to a group of homes from a central storage point on the property.

In the July issue of FUELOIL & OIL HEAT, there appeared an article "Fifty Houses—One Tank" which described the new concept of fueloil distribution through a pipe line system laid throughout a new home development. The general idea had been in the minds of a lot of industry men for years, but did not become practical until a meter was developed that would handle the very slow flow rate of a domestic oilburner.

The visitors to Poughkeepsie were first entertained with refreshments and lunch, and then driven out to the the home development "Oakwood Heights." They saw the special meters installed in the homes, in connection with an oil-fired circulating hot water heating system. Some meters were placed in a manner that the figures could be read from outside the home through a small opening in the basement wall. Others are totally inside the house and meter reader must go in. If the oil user is willing to be placed on an equalized monthly payment, or budget basis, the meter need not be read more often than two or three times a year. Naturally, it might be read only once a year, but the home owner will probably want a more frequent check on how he is doing. The pipeline system at this development has been leased for a term of years by Sinclair Refining Company. The necessary local operation at the house has been turned over to a Sinclair local oil distributor, who will read the meters, render burner service, and handle the accounts. His margin will be reduced, since he has no delivery function.

The oil men in the invited group came from as far as Chicago, Indianapolis, and Houston, although most of them were from Eastern States. The interest expressed in many sections of the fueloil industry is quite noticable. Two additional home developments with 1700 houses have been signed up for Tri-State pipe line systems, and others are in the negotiating stage.

The builder, Mark Ritter, says that the oilheating arrangement is proving a real help in selling the homes. The photographs on this page show some of the oil men strolling about the homes, and the central storage tanks which are to be buried, but were left partially exposed for the oil men to see. Also Ritter is shown in one of the trenches, and a meter placed for outside reading.



Burner-fueloils studied in 1961 products Survey

PROPERTIES of burner-fueloils are listed and studied in the report, "Petroleum Products Survey No. 21", issued by the Bureau of Mines, U. S. Department of the Interior. The report was prepared by O. C. Blade of the Bureau's Petroleum Research Center, Bartlesville, Okla.

The survey was conducted at the request of the National Oil Fuel Institute (formerly OHI) and the petroleum industry under a cooperative agreement between the Bureau of Mines and the API.

Samples of burner-fueloils, typical of their manufacture during the early part of 1961, were analyzed by the refiners and sent to the Bureau.

Table 1—Summary of Grade 1 Fuels, Burner Fueloil Survey, 1961

Geographic distribution of burner fuel oils[1]				Eastern region			Southern region			Central region			Rocky Mt. region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E, F, G			A, B, C, D, H, I, J			F, G, L, M, N			H, I, K		
Number of fuels				47			19			51			26			20		
		ASTM D396 requirements																
Test		Method	Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity	° API	D287	35		39.5	42.9	46.2	39.8	42.7	44.7	39.5	42.5	46.1	39.5	41.8	45.7	35.6	40.7	46.7
Flash point, Tag closed tester	° F	D56[3]	100		120		180	120		158	122		165	122		163	124		153
Viscosity—Kinematic at 100° F	centistokes	D445	1.4	2.2	1.41	1.74	2.48	1.44	1.77	2.55	1.41	1.80	2.55	1.30	1.79	2.2	1.30	1.80	2.1
Cloud test	° F	D97			−65		−6	−64		−10	−64		−8	−64		−10	−64		−20
Pour point	do.	D97		0	−70		−20	−65		−20	−65		−20	−65		−25	−65		−25
Sulfur content	wt. percent	D129		0.5	0.007	0.064	0.17	0.01	0.068	0.21	0.005	0.107	0.48	0.006	0.113	0.41	<0.001	0.131	0.31
Aniline point	° F	D611			138.0	149.9	162.5	138.0	147.6	162.7	135	150.0	162.7	132.6	147.4	168	132	143.4	168
Ramsbottom carbon residue on 10 percent residue	percent	D524		0.15	0.00	0.057	0.11	0.02	0.060	0.08	0.0	0.061	0.10	0.0	0.057	0.10	0.0	0.074	0.11
Corrosion, 3 hours at 122° F.	No.	D130		3	1A		1	1A		1	1A		1	1A		1	1A		1
Ash[4]	percent	D482			0.00	0.00	0.001	0.00	0.00	0.00	0.00	0.00	0.002	0.00	0.00	0.0002	0.00	0.00	0.00
Water and sediment	vol. percent	D96		Trace	0.0	0.0	Trace	0.0	0.0	<0.01	0.0	0.0	0.01	0.0	0.0	Trace	0.0	0.0	Trace
Distillation test, on volume recovered basis:		D86																	
Initial boiling point	° F				324	348	414	330	344	372	318	353	392	317	362	390	317	353	380
10 percent				420	350	385	435	350	383	416	350	390	435	357	393	418	360	391	414
50 percent					401	432	500	401	433	474	401	440	500	382	433	472	382	434	466
90 percent				550	449	491	556	454	492	552	456	501	552	432	491	533	432	494	533
End point					473	531	630	476	532	620	482	539	620	497	537	577	510	545	580

Table 2—Summary of Grade 2 Fuels, Burner Fueloil Survey, 1961

Geographic distribution of burner fuel oils[1]				Eastern region			Southern region			Central region			Rocky Mt. region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G, J			A, B, C, E, F, G, J			A, B, C, D, I, J			D, F, G, L, M, N			H, I, K		
Number of fuels				65			24			49			24			24		
		ASTM D396 requirements																
Test		Method	Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity	° API	D287	26		26.6	35.3	45.8	31.1	35.5	47.7	26.6	35.1	39.3	27.1	35.7	40.7	27.1	34.9	43.0
Flash point, Pensky-Martens closed tester	°F.	D93	100		129		220	140		184	129		210	142		180	128		230
Viscosity, Kinematic at 100°F.	centistokes	D445	[5]2.0	3.6	2.04	2.59	3.5	1.8	2.65	3.5	2.05	2.55	3.5	1.90	2.55	3.30	1.65	2.84	4.3
Cloud test	°F.	D97			−14		22	−35		12	−16		1½	−25		10	−34		20
Pour point	do.	D97		20	−35		15	−50		0	<−25		0	−30		5	<−40		15
Sulfur content	wt. percent	D129		1.0	0.04	0.228	0.65	0.04	0.249	0.72	0.071	0.299	0.81	0.029	0.324	1.06	0.029	0.419	0.93
Aniline point	°F.	D611			106.5	143.0	174.2	122	142.6	166	106.5	136.9	162	92	138.2	162.0	92	140.6	160
Ramsbottom carbon residue on 10 percent residue	percent	D524		0.35	0.01	0.012	0.33	0.05	0.120	0.27	0.05	0.130	0.27	0.05	0.098	0.22	0.06	0.099	0.19
Corrosion, 3 hours at 122°F.	No.	D130			1A		1	1A		1	1A		2	1A		2	1A		1
Ash[4]	percent	D482			0.000	0.001	0.01	0.000	0.000	0.001	0.000	0.000	0.005	0.000	0.000	0.000	0.000	0.001	0.004
Water and sediment	vol. percent	D96		0.10	0.0	0.0	0.01	0.0	0.0	0.01	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	Trace
Distillation test, on volume recovered basis:		D158																	
Initial boiling point	°F.				312	365	456	312	356	386	316	365	444	319	376	418	335	382	450
10 percent				[6]440	380	423	498	380	417	463	376	424	485	376	427	456	376	438	485
50 percent					424	498	541	418	501	534	460	499	535	455	492	519	407	500	550
90 percent			[5]540	640	486	578	606	467	581	612	536	575	612	503	569	625	456	575	625
End point					558	627	658	590	633	658	564	622	658	539	619	660	548	631	690

[1]Regions and districts.
[2]Some of the fuels are sold in districts of more than one region.
[3]Footnote in table 1 of ASTM D396-60T: When pour point less than 0° F. is specified, the minimum viscosity shall be 1.8 cs. and the minimum 90 percent waived."
[4]Figures for ash are not shown in the tables of detailed analyses as they were not required for this grade. However, some data, less than one-third of the analyses, contained results of the tests which are summarized here.
[5]Footnote in table 1 of ASTM D396-60T: The 10 percent distillation temperature point may be specified at 440° F. maximum for use in other than atomizing burners."

Table 3—Summary of Grade 4 Fuels, Burner Fueloil Survey, 1961

Geographic distribution of burner fuel oils[1]				Eastern region			Southern region			Central region			Rocky Mt. Region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E			A, B, C, D, H, K, L			F, L, M			F, H, I, K		
Number of fuels				15			2			7			4			3		
		ASTM D396 requirements																
Test		Method	Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity	° API	D287	..	..	9.0	21.4	31.6	16.9	*	27.9	14.1	20.5	27.9	10.0	19.6	31.0	10.0	18.4	31.0
Flash point, Pensky-Martens closed tester	° F.	D93	130	..	160	..	240	205	..	225	160	..	250	195	..	250	195	..	250
Viscosity Kinematic at 100° F.	centistokes	D445	5.8	26.4	5.56	15.05	25.9	5.61	*	25.9	5.61	17.42	22.9	4.2	12.8	21.3	4.2	12.8	21.3
Cloud test	° F.	D97	..	..	..	..	..	..	..	..	..	..	..	..	**20	..	..	**20	..
Pour point	do.	D97	..	20	−40	..	15	−15	..	−5	−25	..	15	−10	..	10	−10	..	10
Sulfur content	wt. percent	D129	..	..	0.18	0.84	2.12	0.27	*	1.92	0.27	0.90	2.12	1.32	1.43	1.5	1.32	*	1.5
Aniline point	° F.	D611	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ramsbottom carbon residue on 100 percent sample	percent	D524	..	..	1.23	4.03	7.00	1.23	*	7.00	1.23	4.30	6.48	2.66	*	7.1	..	**7.1	..
Corrosion, 3 hours at 122° F.	No.	D130	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..
Ash	percent	D482	..	0.10	0.003	0.016	0.040	0.01	*	0.015	0.001	0.021	0.05	0.00	0.003	0.01	0.00	0.004	0.01
Water and sediment	vol. percent	D96	..	0.50	Trace	0.11	0.2	..	*	0.1	0.0	0.09	0.2	0.0	0.07	0.1	0.0	0.07	0.1
Distillation test, on volume recovered basis:		D158																	
Initial boiling point	° F.	..	..	..	..	..	..	..	..	..	..	..	..	..	**400	..	..	**400	..
10 percent		..	..	..	..	..	..	..	..	..	..	..	..	..	520	..	..	520	..
50 percent		..	..	..	..	..	..	..	..	..	..	..	..	..	580	..	..	580	..
90 percent		..	..	..	..	..	..	..	..	..	..	..	..	..	635	..	..	635	..
End point		..	..	..	..	..	..	..	..	..	..	..	..	..	660	..	..	660	..

Table 4—Summary of Grade 5 Fuels, Burner Fueloil Survey, 1961

Geographic distribution of burner fuel oils[1]				Eastern region			Southern region			Central region			Rocky Mt. region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G, J			B, E, G, J			A, C, D, H, I, K, L			B, D, E, F, G, L, M			E, F, G, H, I, K		
Number of fuels				16			4			18			11			15		
		ASTM D396 requirements																
Test		Method	Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity	° API	D287	..	..	7.1	17.2	21.9	12.5	15.2	17.6	12.4	16.5	20.1	1.9	12.7	20.8	2.7	12.6	17.6
Flash point, Pensky-Martens closed tester	°F.	D93	130	..	151	..	270	170	..	270	156	..	240	148	..	290	148	..	240
Viscosity, Kinematic at 100°F.	centistokes	D445	32.1	..	25.8	61.5	177.2	38.6	..	43.2	36.8	63.4	138.1	38.6	78.0	152.0	40.8	88.7	120
Furol at 122°F.	sec.	D88	..	40	13.7	23.5	41	15.5	20.5	30	16	24.9	>40	15.5	30.7	54.0	20.3	29.1	39.6
Pour point	°F.	D97	..	..	−25	..	40	−30	..	60	−25	..	60	−25	..	90	−35	..	50
Sulful content	percent	D129	..	..	0.28	1.17	2.50	0.28	1.77	3.10	0.57	1.52	3.5	0.28	1.84	3.5	0.90	1.83	3.5
Ramsbottom carbon residue on 100 percent sample	do.	D524	..	..	4.8	6.7	11.7	3.9	7.0	10.0	3.9	6.9	9.4	1.2	6.8	10.0	3.5	7.5	12.7
Ash	do.	D482	..	0.10	0.002	0.021	0.050	0.002	0.029	0.06	0.002	0.027	0.08	0.002	0.028	0.10	0.002	0.032	0.10
Water and sediment	vol. percent	D96	..	1.00	0.0	0.12	0.20	0.0	0.09	0.2	0.0	0.14	.3	0.0	0.14	0.3	0.1	0.13	0.2

Table 5—Summary of Grade 6 Fuels, Burner Fueloil Survey, 1961

Geographic distribution of burner fuel oils[1]				Eastern region			Southern region			Central region			Rocky Mt. region			Western region		
Districts within region				A, B, C			D			E, F, G			H, I, J, K			L, M, N		
Additional districts[2]				D, E, F, G			A, B, C, E, G, J			A, B, C, D, H, I, J, K, L			D, E, F, G, L, M, N			E, F, G, H, I, K		
Number of fuels				42			24			33			18			27		
		ASTM D396 requirements																
Test		Method	Min.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
Gravity	°API	D287	..	..	−3.33	12.7	19.2	5.4	11.3	14.3	−3.33	10.1	23.0	1.5	9.3	19.1	1.5	7.6	13.4
Flash point, Pensky-Martens closed tester	°F.	D93	150	..	152	..	360	152	..	285	160	..	365	170	..	290	170	..	265
Viscosity Furol at 122°F.	seconds	D88	45	300	13.7	164.1	302	45.0	163.5	285	21.5	185.8	290	50	157.8	278	50	156.1	415
Pour point	°F.	D97	..	..	−10	..	60	−10	..	75	15	..	75	30	..	90	20	..	60
Sulfur content	percent	D129	..	..	0.53	1.34	3.40	0.34	1.58	3.36	0.42	1.47	4.0	0.516	2.02	4.0	0.80	1.91	4.0
Ramsbottom carbon residue on 100 percent sample	do.	D524	..	..	5.4	10.4	15.8	4.9	11.0	15.4	4.9	10.9	20.5	7.0	11.9	23.6	8.1	12.3	17.7
Ash	do.	D482	..	..	0.005	0.047	0.120	0.002	0.037	0.08	0.002	0.053	.3	0.002	0.040	0.19	0.01	0.049	0.13
Water and sediment	vol percent	D96	..	2.00	0.0	0.20	0.4	0.0	0.18	0.50	0.0	0.18	0.50	Trace	0.22	1.0	0.1	0.17	1.0

[1] Regions and districts.
[2] Some of the fuels are sold in districts of more than one region.
[3] This method was selected for Grade 1 burner fuel oils for the survey although ASTM D396-60T, Tentative Specifications for Fuel Oils, specifies flash point by Pensky-Martens Closed Tester (ASTM D93).
[4] Figures for ash are not shown in the tables of detailed analyses as they were not required for this grade. However, some data, less than one-third of the analyses, contained results of the test which are summarized here.
*—No averages were computed as only two samples were represented for this test.
**—Result of test on one sample.

Equipment Jobbers have Washington Exposition

The National Association of Oil Equipment Jobbers met in Washington, October 15th to 17th for its Eleventh Annual Convention and Trade Show. In its relatively short lifetime, this Association has become impressive and important. At the Washington meeting for example, the registration was 790. These were all individuals directly connected with the distribution of equipment designed to facilitate the distribution of petroleum products.

For the fueloil field such products are of course pumps, meters, reels, hose, couplings, filters, nozzles, audible signals, and the like. Most of the convention sessions were limited to active members, although there were three open general session speakers.

Heading the convention activities was E. O. Habhegger, president of the company of that name in Philadelphia. He was the retiring president of the Association. The featured speakers were Dr. G. Herbert True of South Bend, Indiana. Dr. True is a Management Consultant and he emphasized the difference between creative selling and the very common habit of simply order taking at the counters in the equipment jobber's establishment. Also E. F. McLaughlin, Engineer of Socony Mobiloil Company of New York, who had an important presentation on loading racks. The luncheon speaker was U.S. Senator Frank J. Lauche of Ohio.

In the display rooms were booths and exhibits of 58 manufacturers.

The new officers elected for the year ahead were:

President: Warren B. Cruzen, President Cruzen Oil Equipment Co., Inc. Memphis, Tennessee.

Vice-President: R. S. Murray, Jr., President Geo. S. Thomson Co., Inc. El Paso, Texas.

Treasurer: Ray Ratcliff, General Manager Willborn Brothers Co., Inc. Amarillo, Texas.

Executive Secretary: Howard Upton, and Assistant Secretary: Don Hadden, both Tulsa, Oklahoma.

The next Annual Convention is to be held in Cincinnati October 17-19, 1962.

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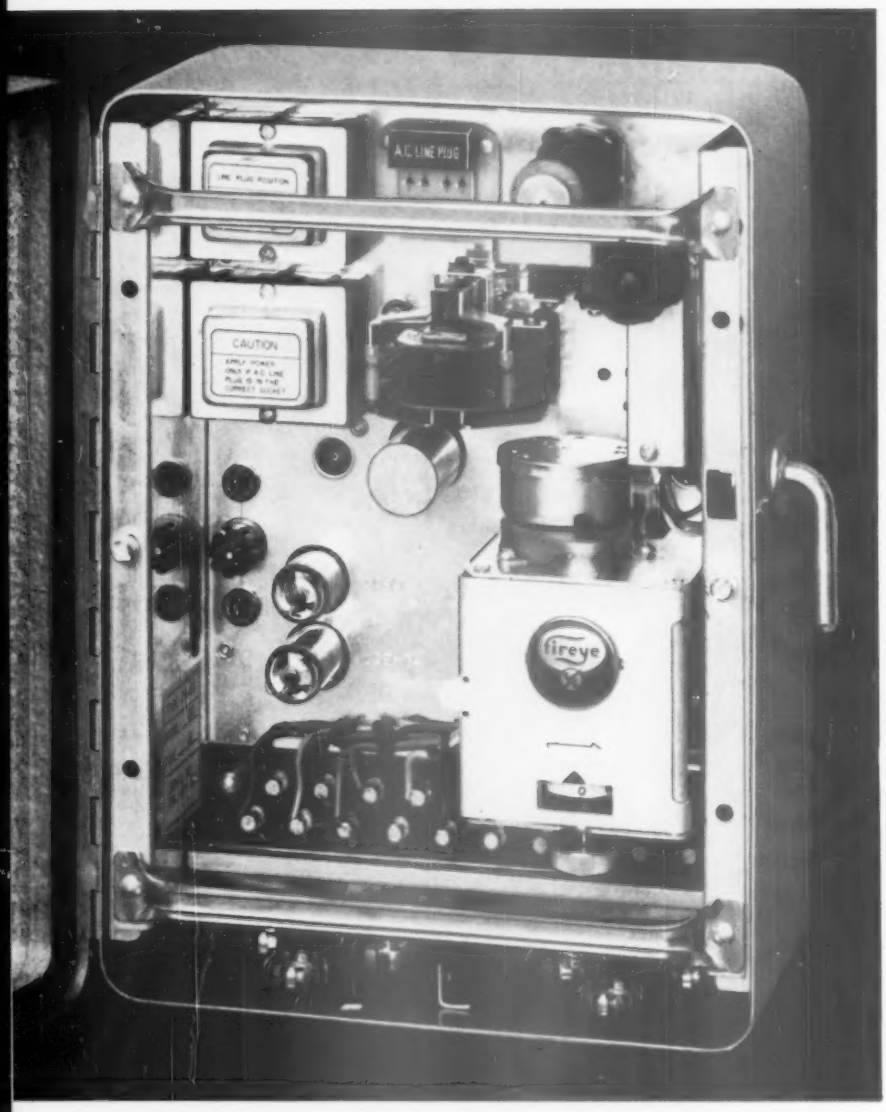

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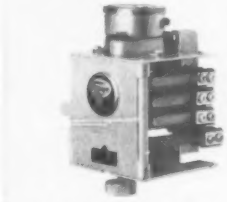

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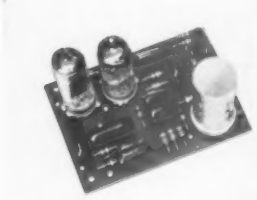

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requires fewer tubes.

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The new FP-2 system, Model 6018, is completely interchangeable with the former model. WRITE FOR informative Bulletin CP-51. Combustion Control Division, Electronics Corporation of America, One Memorial Drive, Cambridge 42, Mass. In Canada: Electronics Corporation of America (Canada) Ltd., 104 Advance Road, Toronto 18, Ontario.

E C A fireye

How to increase gph Rates for tankless Water Heaters

With gph Rates and Boilers oversize for Heating, tankless Loads are no Problem

by Jean L. Dupuis

FUELOIL & OIL HEAT'S technical staff never tires of studying the letters which fueloil men, equipment dealers, and servicemen send to the Readers' Problems department. Some letters contain exceptional questions . . . about oilfiring an incinerator in a New Zealand hospital, oilburners for a Turkish bath in Hartford, Conn., and the possibility of sending attachments to Hawaii to convert domestic pressure burners to the use of No. 6 oil. To this we replied that we are sorry but such attachments are found only in the best kind of day dreams.

The best serviceman's letter of all time, incidentally, came from a Long Islander who had installed an oilburner in his father-in-law's house, had family trouble as the result. The serviceman listed a dozen kinds of burner misbehavior of which the burner was guilty — breakdowns, snorts, puffs, panting, etc.—wound up declaring the burner had done everything but come up in the parlor and perform as a dog not house-broken. "And, it would do that if it were not tied down!"

The Readers' Problems department protects every inquirer whose question is published—by scrambling or otherwise changing his initials. That prevents identification by a competitor or friend, which can be embarrassing.

A good reader's problem just came in from a Hartford, Conn. heating contractor and fueloil retailer.

Here's his letter, which is sufficiently important to have precipitated the preparation of this article:

"We have found a wide difference of opinion in regard to the sizing of boiler capacity and fuel input requirements for domestic hot water tankless heater loads in larger buildings such as apartment houses and small commercial buildings.

"We wonder if you have published articles pertaining to the matter. Anything you might refer to us or any comments you might care to make would be greatly appreciated."

Fueloil men and oilburner equipment men should be greatly interested in all purposes for which fueloil can be used, and the large-scale production of hot water in large boiler rooms is a particularly important use for fueloil. In a city, millions and millions of gallons of hot water are used every hour, every day the year-round, by occupants of apartment houses, office buildings, factories, schools, etc. One of the best activities for a fueloil retailer lies in supplying the oil to provide these millions of gallons of hot water. To engage best in this activity, a fueloil specialist must know more than a little about heating water through the use of fueloil.

As our Hartford, Conn., friend points out, great differences of opinion exist in regarding to providing extra boiler capacity and extra gph fire sizes for heating water in apartment houses and other large buildings. Similarly and related to this, different men select sizes of large heating boilers according to greatly different ideas.

For example . . .

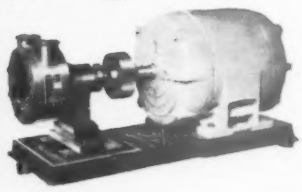
Given complete details about a certain 100-family apartment house and asked to figure the correct size of a new oilburner to heat it one dealer came up with 210-horsepower boiler size . . . for heating only, as had been stipulated.

Asked how much increase was needed to allow for adding a tankless water heater adequate for the 100 families in the building, he answered, "None. Every boiler I install is sized large enough to provide hot water on tap."

A second dealer figured the same building needed a 175-horsepower boiler for heating only—and that additional capacity of 25-horsepower

THE KRAISSL COMPANY

YOU NEED a Kraissl Class 60 direct-drive pump . . .



. . . for No. 2 to No. 4 FUEL OIL inclusive and reduction drive models for heavy oil.

Fig. 1 indicates high suction lift characteristics. Note only slight reduction in capacity with increasing vacuum. Fig. 2 shows typical data based on 150 SSU oil. Small figures on curves are suggested motor H.P. at the pressures indicated.

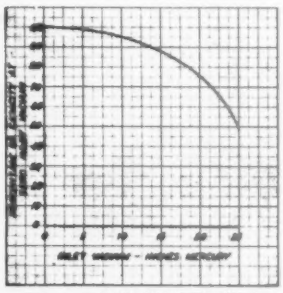


FIG. 1. VACUUM-CAPACITY CHART

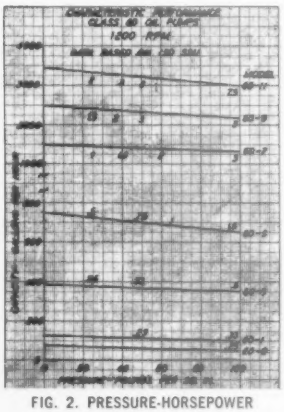


FIG. 2. PRESSURE-HORSEPOWER CAPACITY CHART

Write for Bulletin 1904

KRAISSL CO. Inc.

295 Williams Ave., Hackensack, N. J.

would be needed if a tankless water heater, large enough for all the building occupants, were installed.

Why exact Sizes?

The facts of the matter are:

1—Dealers who install considerably oversize boilers only for heating buildings find no need to increase boiler sizes when tankless heaters are added to their boiler installations.

2—Dealers who use exact and precise methods for sizing boilers to carry only heating loads do need to increase boiler sizes when adding tankless water heaters to their boilers.

3—On the second basis, not much added boiler capacity and gph firing capacity is needed. In typical instances involving apartment houses, only a 7% to 12% increase in boiler size is needed—in a city where the design outside temperature is from minus 10°F. to plus 70°F. An increase of greater percentage is needed, of course, in mild-climate and warm cities—and in these cities the problem of figuring tankless water heater loads is of great importance.

Figuring carefully as almost all heating engineers agree he should, a dealer can arrive accurately at the size boiler, on a Btu per hour basis, needed only for a heating load by multiplying the number of square feet of standing steam radiation in the building by 240 (Btu output per hour of one foot of standing steam radiation) and then adding a suitable allowance for piping and pick-up. The result is gross Btu load.

This allowance may be as high as 40% or 50% in a small building, needing say a 25 hp boiler, and having steam mains and condensate returns which are not well insulated.

The allowance may be as low as 25%, or in exceptional instances even 20%, in extremely large buildings, needing 200 to 400 hp boiler capacity, and having mains and returns which are beautifully insulated.

This thumb rule can be used to arrive at the increase in firing rate needed for an apartment house made up of five-room apartments . . . the gph firing rate increase needed to permit adding a tankless water heater to a boiler sized closely in the first place to carry only a heating load:

COMMERCIAL & INDUSTRIAL oilburning

First Step—Multiply the number of apartments by the factor .06 or 6/100.

Second Step—In every case add the number of 1.5 or 150/100.

The result is the increase in firing rate needed because, in a house having five-room apartments occupied in a usual fashion, a tankless water heater is added to a boiler sized closely in the first place for heating only.

The table shows how this works out. For a ten-family apartment house, the first step includes multiplying ten times .06 and arriving at .6 as the result. The second step includes adding 1.5 to this .6 and obtaining the 2.1 added gph factor in the table.

For a 50-family house, the 50 is multiplied by .06 to arrive at 3.0, and this 1.5 is added to obtain the 4.5 in the table.

The Figures in the Table

Percentagewise with respect to the number of apartments in the building, the "added gph" figures in the table are greater for relatively small apartment houses, less for houses as they become larger and larger.

That's because the fewer the faucets in a house, the greater is the peak load (caused by keeping open a large percentage of total faucets at one time) compared to the usual load on an hourly basis.

With only two hot-water faucets in a building, as an extreme, the likelihood is great that both will be open at one time on sufficient occasions to be important. The tankless heater capacity, and the flow of Btu's from the boiler to this heater, must be great enough for two faucets or 100% of the faucets in the building.

With 20 hot-water faucets, never will all 20 be open at one time. However if five are open at once, the load is great on a percentagewise basis—it's 25% of the theoretical full load equal to opening all the 20 hot-water faucets in the building.

Usually a hot-water faucet is open

Added gph needed in ten-family and larger apartment houses having five-room apartments, and heated by steam or hot-water boilers

Families	*Added gph*
10	2.1
20	2.7
30	2.7
30	3.3
40	3.9
50	4.5
100	7.5
150	10.5
200	13.5
250	16.5

for but a few minutes at a time. With 200 or 500 hot-water faucets in a building, never will 25% be open at one time—as may occur in a building having only 20 such faucets.

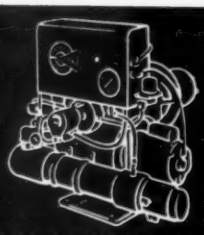
* * *

N.Y. Housing Authority is a big fueloil Customer

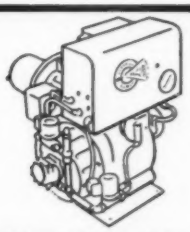
AROUND 90 million gallons of fueloil are burned by the New York City Housing Authority during the average year, according to Gerald J. Carey, general manager. In round figures this amounts to $6 million worth of fuel.

In severe weather, the Authority

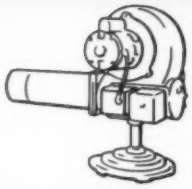
This battery of oil-hungry units, installed at Glenwood Houses, in Brooklyn, N. Y., is typical of the modern oil-burning equipment used in public housing developments of the New York City Housing Authority. The Authority is an impressive customer of a number of fueloil dealers, selected by public bidding, to the tune of some 90 million gallons of No. 6 fuel oil a year. The Authority's annual fuel bill for the 1961-1962 fiscal year will amount to around $6 million. In severe winter weather, it uses about a half-million gallons of oil per day to keep the 430,000 residents of its 1,400 buildings comfortable.



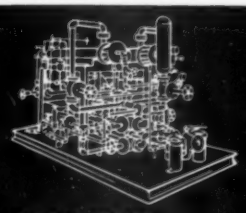
C-45 PRESSURE ATOMIZING OIL BURNER . . . forced or natural draft . . . for number 5 or lighter fuel oils . . . 7 models to 33 gph . . . UL approved. BULLETIN 100A.



C-20 PRESSURE ATOMIZING OIL BURNER . . . forced or natural draft . . . for number 2 fuel oil . . . 7 models to 33 gph . . . UL approved. BULLETIN 102.



NAIROIL AUTOMATIC OIL BURNERS . . . for firing small steam or hot water boilers, etc. . . . 4 sizes available ranging from ¾ to 20 gph of number 2 fuel oil. BULLETIN 113B.

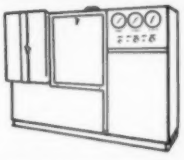


PUMPING AND HEATING UNITS . . . for problems involving heavy fuel oil for combustion. Single or duplex units from 2 to 100 gpm in standard or special models. BULLETIN 40.

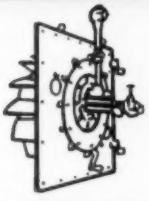
Check Your Fuel Firing Needs

From National Airoil . . . you can obtain a complete line of top-quality oil burners, gas burners and related combustion equipment shown here. Check your needs . . . we'll be happy to supply you with engineering data and assistance. No obligation, of course.

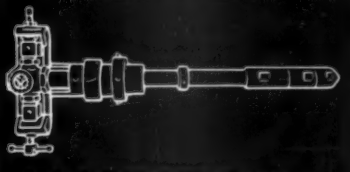
DUAL STAGE OIL BURNERS . . . for use when both mechanical and steam atomizing principles are incorporated in a single oil burner. 3 standard sizes. BULLETIN 25.



AUTOMATIC PACKAGED FIRING UNITS . . . Steam atomizing automatic firing units for oil and/or gas fuels. Standard unit capacities from 200 to 830 boiler horsepower (7,200 to 30,000 lbs of steam per hour). Larger units for special needs. BULLETIN 25.



UNIVERSAL REGISTER UNITS . . . a wide range of models including swing-type are available with capacities ranging from 60 to 500 gph. BULLETIN 51.



STEAM ATOMIZING OIL BURNERS . . . for use where steam or compressed air is available for firing many types of industrial process furnaces. 5 sizes have rated capacities from 10 gph to 725 gph. BULLETIN 23.

Established 1912 *Incorporated* 1917

NATIONAL AIROIL BURNER

NATIONAL AIROIL BURNER COMPANY, INC.

1284 E. Sedgley Avenue • Philadelphia 34, Pa., U.S.A.

Industrial Oil Burners, Gas Burners and Combustion Equipment

uses a half-million gallons of oil per day to keep the 430,000 residents of its 1,400 buildings comfortable.

The 99 public housing developments are kept supplied by independent oil dealers who are required to keep the tanks supplied to the fullest practical level. Fueloil inspectors are on duty at oil terminals and take samples of oil before the trucks move out to make deliveries. These samples are tested to insure that the proper quality is sent.

At the developments the quantity is checked by Authority boiler room personnel. The Authority keeps in touch with the Weather Bureau to avoid getting caught short particularly over weekends and holidays, reports Irving Wise, director of management.

Wise says that each development is equipped with snowplows, snow blowers and other equipment to aid deliveries during heavy storms. Every maintenance man is pressed into service, and when it is necessary tenants are hired at hourly rates to help until the emergency is over.

3 REASONS WHY YOU GET GREATER EFFICIENCY

and longer life with this

NEW OIL FIRED WATER HEATER

More Hot Water Per Gallon of Oil Burned...Heat Saver Units reuse exhaust heat. Copper "finned-tube" coils multiply heat transfer characteristics 9 times for faster recovery with less heat loss.

Less Maintenance Expense...Easy cleaning without shutting down system or effecting hot water supply. No small flues to soot up or clean. Lime build-up is lowered by rapid water circulation.

Easier To Install...All units are delivered plumbed-up and wired-up for fast, easy, factory approved installation.

For complete information on all heater combinations write for illustrated brochure

Model No.	GPH Recovery 100° Rise	Gallons of Oil per Hr.	Storage Capacity	Dimensions H	W	L
0-2-3-250	410	3.5	250	90"	44"	108"
0-2-4-250	600	5	250	90"	44"	108"
0-2-5-250	1050	7	250	90"	44"	108"
0-3-3-390	630	5	390	90"	44"	138"
0-3-4-390	900	7	390	90"	44"	138"
0-3-5-390	1400	12	390	90"	44"	138"
0-4-5-680	2100	15	680	90"	44"	168"

ACE TANK & HEATER CO.

10847 So. Painter Ave., Santa Fe Springs, Calif.

Since 1937

NOFI Meeting

(Begins on page 40)

widest possible front to get the story of modern fueloil handling to every dealer and driver in the industry.

The immediate program calls for completion of a draft of the fueloil handling story, distribution to the membership for approval and a final draft ready for presentation to NOFI by mid-December.

Chapter Consolidations

Thomas Scott described the work his committee has done to devise a plan for membership integration and Advisory Council representation. Basically, he reviewed three long-range recommendations. First, mergers of trade associations and promotional groups are to be encouraged, but not forced; continuity of these merged associations are to be protected and all market groups are to be represented in NOFI.

The committee plan now goes to the board for consideration. Basically, it provides for one representative and an alternate on the Advisory Council for each market area, where there is an organized association activity. In major markets where there is in excess of 300 million gallons of fueloil sold, there shall be one additional representative and alternate for each 300 million gal. increments.

Codes and Ordinances

Hal Sweatt, substituting for C. E. Blome, suggested these points for fueloil and oilheating dealers:

1. Become acquainted with the agency administering oilburner regulations in your area;

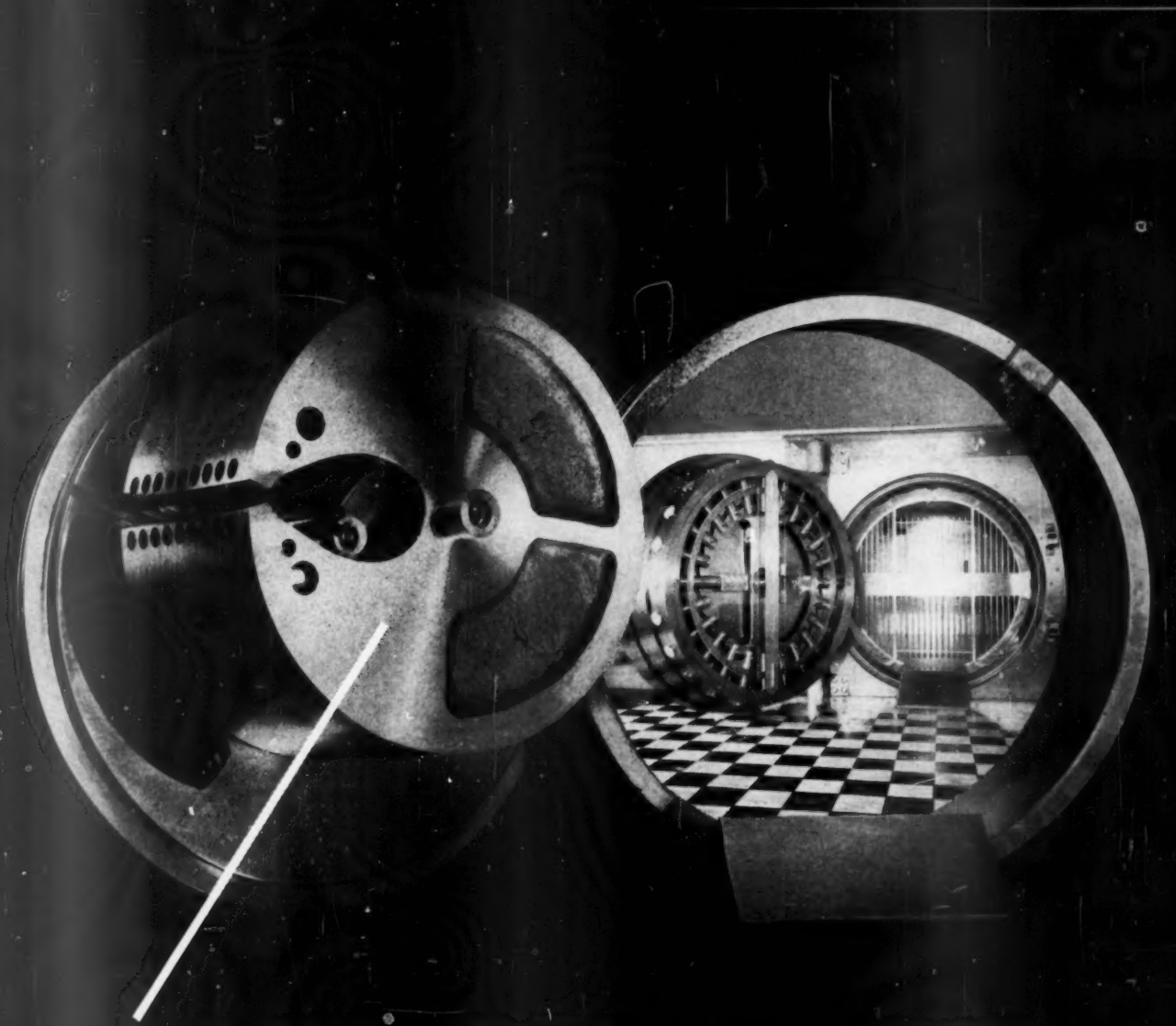
2. Understand the Code and its implications;

3. Make sure that the responsible agency or official has a copy of National Fire Protection Association Bulletin No. 31 covering oilburner installations;

4. Be sure that the local Code permits the use of new developments;

5. If you find restrictive requirements, advise NOFI and include the details of the problem;

6. If the staff cannot handle the problem, the Codes and Ordinances Committee will send recommenda-



THE FAMOUS NEPTUNE MEASURING CHAMBER...

Accuracy you can bank on

neptune METER COMPANY

Banks depend on vaults to protect their assets. You depend on meters to protect your profits. They tell you what to pay and bill, guard against hidden losses, and protect your customer good will.

But a meter that isn't trustworthy can cut deeply into profits. Repairs to keep it in line can be costly, too. That's why *sustained accuracy* is the most important consideration when buying a meter. All other factors take a back seat.

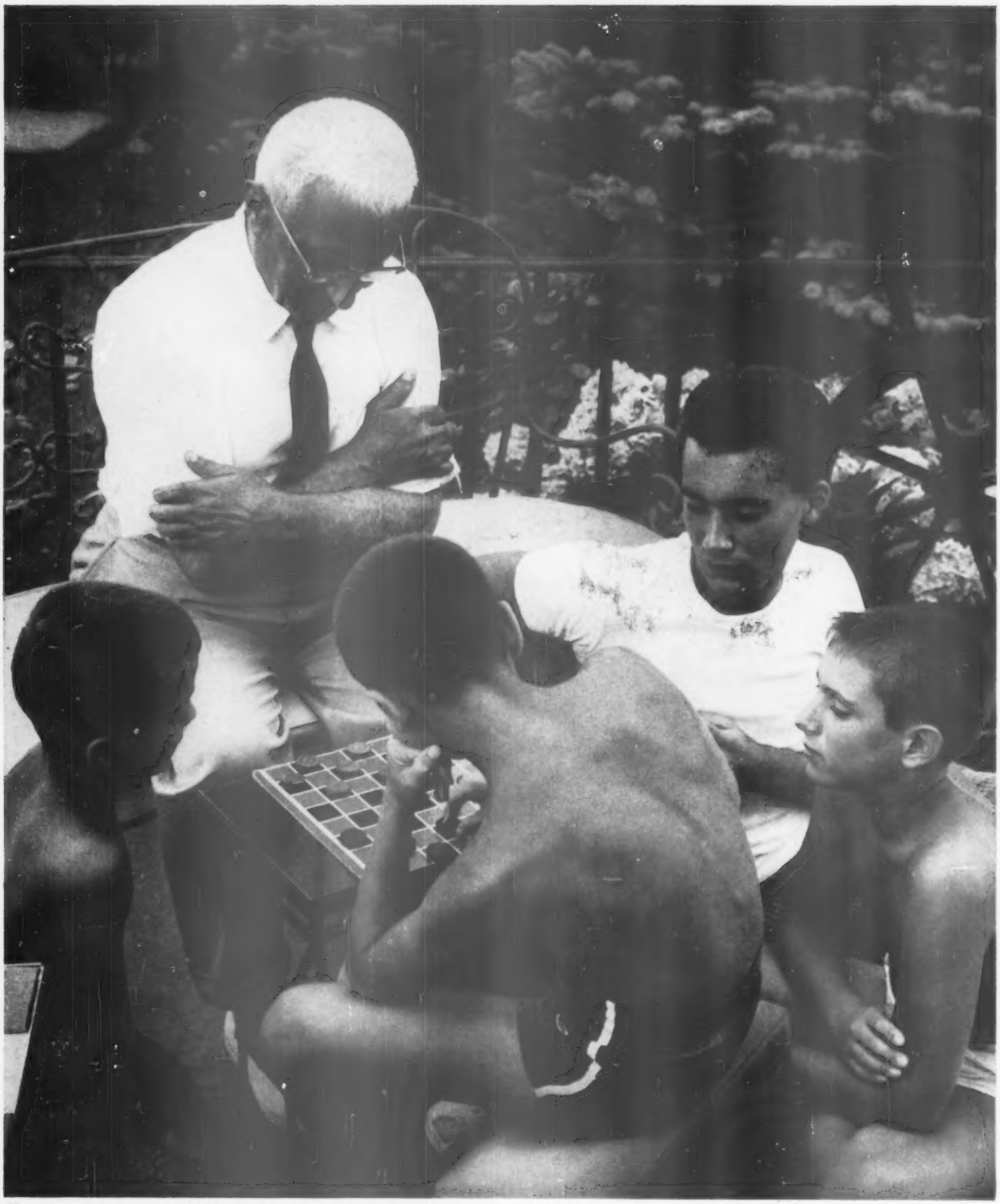
Any meter is only as accurate as its measuring chamber. We believe the Neptune chamber is the finest available combination of both accuracy and reliability. It's simple . . . only one moving element. Because the meter has double-case design, its accuracy is not affected by pressure changes. Through precise machining, it achieves true capillary seal. This controls slippage and practically eliminates metal-to-metal wear.

Coupled with other features such as no-drift "gear shifter" calibration, it gives you true sustained accuracy. Specify Neptune . . . the meter you can bank on.

NEPTUNE METER COMPANY
47-25 34th St., Long Island City 1, N. Y.
Branches and Jobbers in All Principal Cities
In Canada: Neptune Meters, Ltd., Toronto, Ontario

LIQUID METER DIVISION

67



Four heads are supposed to be better than one, but it looks like grandpa is holding his own as he takes on the boys in checkers.

GULF SOLAR HEAT DEALER enjoys grandchildren and A GRAND BUSINESS

Six sons, two daughters, a flock of grandchildren plus a loving wife. Add this wonderful family to a highly prosperous fuel-oil business and you've summed up the happy life led by Mr. Gervasio Ruggieri of Philadelphia, Pa.

Eighty years young and still going strong, Mr. Ruggieri can trace his business success back to two major milestones . . . 1931, when he first began selling fuel oil in South Philadelphia, and 1949, when he decided to affiliate exclusively with Gulf.

As he tells it, "I make it my job to know fuel oils...all brands. And I'm sold on Gulf Solar Heat! The main reason? Purity. That 'Gulfining' process makes Solar Heat the cleanest burning fuel I've come upon in my 30 years in this business. Keeps my customers happy and their burners trouble-free."

And does it sell! Mr. Ruggieri has increased his volume every single year since joining Gulf. It's no wonder, considering the unbeatable combination of Ruggieri's reputation, Gulf Solar Heat's excellent merchandising material, and the "always backs me up" partnership between the Ruggieris and their Gulf representative.

How about another unbeatable combination—Gulf Solar Heat and *you!* For full information, write or phone your nearest Gulf office today.

Oil HEAT

Gulf Oil Corporation

GULF SOLAR HEAT heating oil

Where better than the "city of brotherly love" to find 5 brothers working together in a business? *Above*, Mr. Ruggieri's sons, Eugene, Joseph and Angelo, take time off to bowl at the family-owned 34-lane alleys. *Below*, brothers Michael and Frank talk to Gulf representative Pete King, on the right.

tions. But, remember, these recommendations are more effective when they are made before Codes are adopted.

Ed Heeg spoke about air pollution control and commented that restrictions on oil, but exempting gas, make it hard to compete. Unfortunately, inclusion of such restrictions is not rare.

He said that every local chapter of NOFI must know about any impending air pollution regulations. They must be studied as far in advance as possible and then NOFI should be asked to review them. This will permit the Institute to state its case in time and secure equitable treatment for oil.

Heeg also said that the study being undertaken by API should be helpful. This is a $50,000 program to study emissions from oils. The report is expected to be ready in the summer of 1962.

Cooperative Promotional Funds

Fred Burroughs, NOFI vice-president, explained that for 1962 the net available funds will be calculated prior to the start of the year and minimum guarantees allocated to the participating programs. Organizations managing campaigns were cautioned not to list participating dealer members in advertising or promotion, since such action would make these expenditures taxable.

Also, Burroughs indicated that no new programs would be started after the first six months of the year. New program applications will be accepted after next June, the organizations can be members of NOFI, but they will have to postpose promotion on a matching fund basis until 1963.

Finally, each program in 1962 must be a NOFI Chapter in order to be eligible for matching funds.

Convention and Exposition

The exhibit space at the 1962 Oil Heat and Air Conditioning Exposition is more than 60% sold, some five months before the show opens next April 9 at the Conrad Hilton Exposition Hall in Chicago. So reported Frank Brophy, exposition chairman. The 40th annual convention of the Institute will take place at the same time, April 9 to 12, with Ray Nathan as chairman.

Brophy explained preliminary plans for building attendance at these affairs, including special kits for all dealer groups, package tours, publicity material, advance registration. The meeting program calls for a technical symposium, half-day dealer management conference, plus sessions to cover other NOFI activities.

Season's Greetings

MAY THE NEW YEAR BRING
PEACE
GOOD WILL
AND
PROSPERITY

Hago

PRECISION NOZZLES
1120 GLOBE AVENUE
MOUNTAINSIDE, NEW JERSEY

NOFI issues water Heater promotion Kit for Dealers

A PROMOTION KIT on oil-powered water heaters has been prepared for members by the National Oil Fuel Institute, New York.

A brochure lists sales possibilities from car washes to restaurants as well as homes, provides the data to convince buyers, and supplies operational data for handling the business.

The four consumer pieces are entitled, "Never another cold Shower;" "4½ times faster!" "Next!" and "Some like it Hot!" Each stresses the rapid recovery rate of the oil-powered water heater.

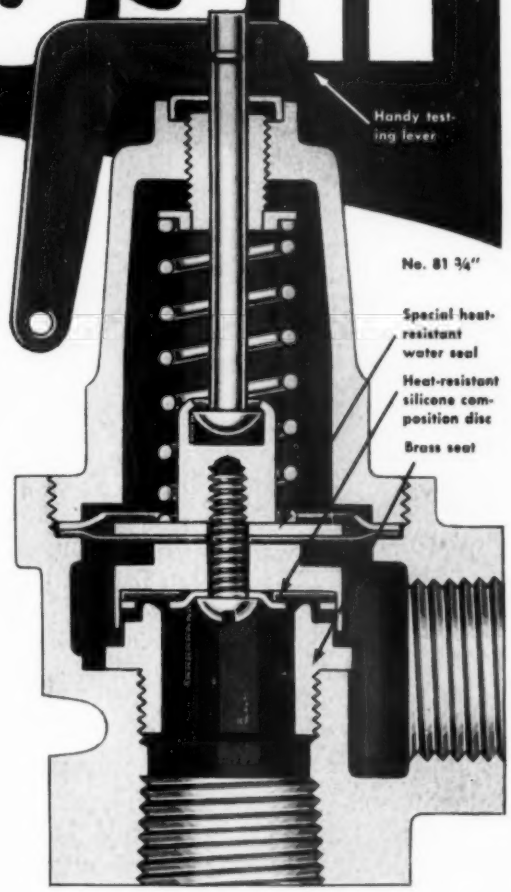
THRUSH

HIGH PRESSURE

Safety

Relief Valves

MEET ALL A.S.M.E. CODE REQUIREMENTS



Illustrates simplicity and quality construction.

WHEN SAFETY of life and property are at stake only the best is good enough. Give your customers safe protection of water heaters and storage tanks of domestic water supply systems. Install the No. 81 - ¾", or the No. 181 - 1" Thrush Safety Relief Valve. Look at these features:

1. A.S.M.E. rated and National Board listed.
2. Positive opening, tight closing, low fallback.
3. Works like a water relief valve should.
4. Will relieve steam if an emergency occurs.
5. Spring protected from water by special seal.
6. Heat-resistant water seal.
7. High heat-resistant silicone disc will not stick, swell, warp or distort.

This valve is built for years of dependable service yet costs no more than most valves without these outstanding features. Ask your wholesaler today or write Department C-12 for more information.

NO.	SET AT LBS.	A.S.M.E. RATINGS BTU PER HOUR
81 - ¾"	75	1,040,000
	100	1,340,000
	125	1,640,000
	150	1,940,000
181 - 1"	75	2,475,000
	100	3,170,000
	125	3,865,000
	150	4,560,000

No. 81 - ¾"
and
No. 181 - 1"
ARE
HIGHLY RATED
DEPENDABLE
VALVES

Quality Hydronic Heating Specialties

H. A. THRUSH & COMPANY • PERU, INDIANA

New future in Oil Heat Theme of NOFI exposition

"THE NEW FUTURE in Oil Heat" will be the theme of the 24th Oil Heat and Airconditioning Exposition slated for April 9th through 12th at the Conrad Hilton Exhibit Hall in Chicago, the National Oil Fuel Institute, New York, N. Y., has announced. The Exposition theme will be carried through on all preparations for this show which for the first time this year will be sponsored by NOFI, representing all segments of the oilheating industry.

NOFI reports that more than 60% of the Exposition space has been sold. A special feature of this year's show will permit exhibitors to purchase installation and dismantling services and telephone and electrical outlet facilities in a one-price package with their booth space.

As in previous years, the 40th annual oil heat industry convention (formerly held by the Oil Heat Institute) will run concurrently with the Exposition. Special convention sessions will include a symposium of the Technical Division of NOFI and a half-day national dealer-management conference.

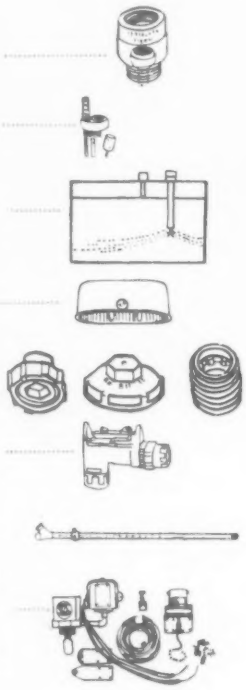
Ray Nathan, president, Bedford Oil & Air Conditioning Co., Inc., Floral Park, N.Y., will be the convention's chairman.

GREATER SPEED, FOR GREATER PROFIT, THROUGH THE *SCULLY* SYSTEM

Every unit of the SCULLY System has been built to combine maximum speed and efficiency in every fuel oil delivery. And even more important, each unit has been engineered as part of a complete and dependable system, the only delivery system available. SCULLY products bring you the extra profits that come with the world's fastest fuel oil delivery equipment.

1. VENTALARM® Signal. **The original whistling tank fill signal. Over five million now in use. Available for old and new tank installation.**
2. VENTALARM® Gauge. **Money-saving 2-in-1 combination for new burner installations. One single unit combining the original VENTALARM® Signal with a Tank Gauge.**
3. **Deep filling with SCULLY® Filful eliminates foaming, making it possible to stop cut-off of the whistle by rising foam. This feature enables filling to the proper level and increasing the average as much as 50 gallons.**
4. SCULLY® Safety Vent Cap. **An improved cap for 1" and 1¼" vent pipes that amplifies VENTALARM® Signal sound. Provides 50% more venting area than I.D. of pipe.**
5. UNIFIL® System. **The tight connection delivery system that pays for itself and returns a profit in the first year. Over ten exclusive features.**
6. SCULLY® Com Nozzle. **A single rugged unit that has revolutionized nozzle design: lighter, faster, easier to repair, and with minimum hydraulic shock.**
7. VENTAFIL® **The portable combined fill, vent and signal for underground tanks. Built for fast pumping speeds without blowbacks. Light and rugged.**
8. Combination SCULMATIC-SCULTROL. **The only combination that provides absolute flow control and pressure-limiting control.**

See for yourself why SCULLY, after 25 years, is still the industry's leader. Call NOrmandy 5-3900 for more information about any SCULLY products — and the unique SCULLY System.



SCULLY SIGNAL COMPANY
MELROSE 76, MASSACHUSETTS
IN CANADA: E. S. Gallagher Sales, Ltd., 10 Hafis Rd., Toronto, Ontario

©1961 SCULLY Signal Company

Wisconsin Association Increases Ad Budgets

DURING 1961, the Wisconsin Petroleum Association raised $55,000 within the state for oilheating promotional activities. To achieve this increased participation and to build towards greater contributions next year the association scheduled the following meetings:

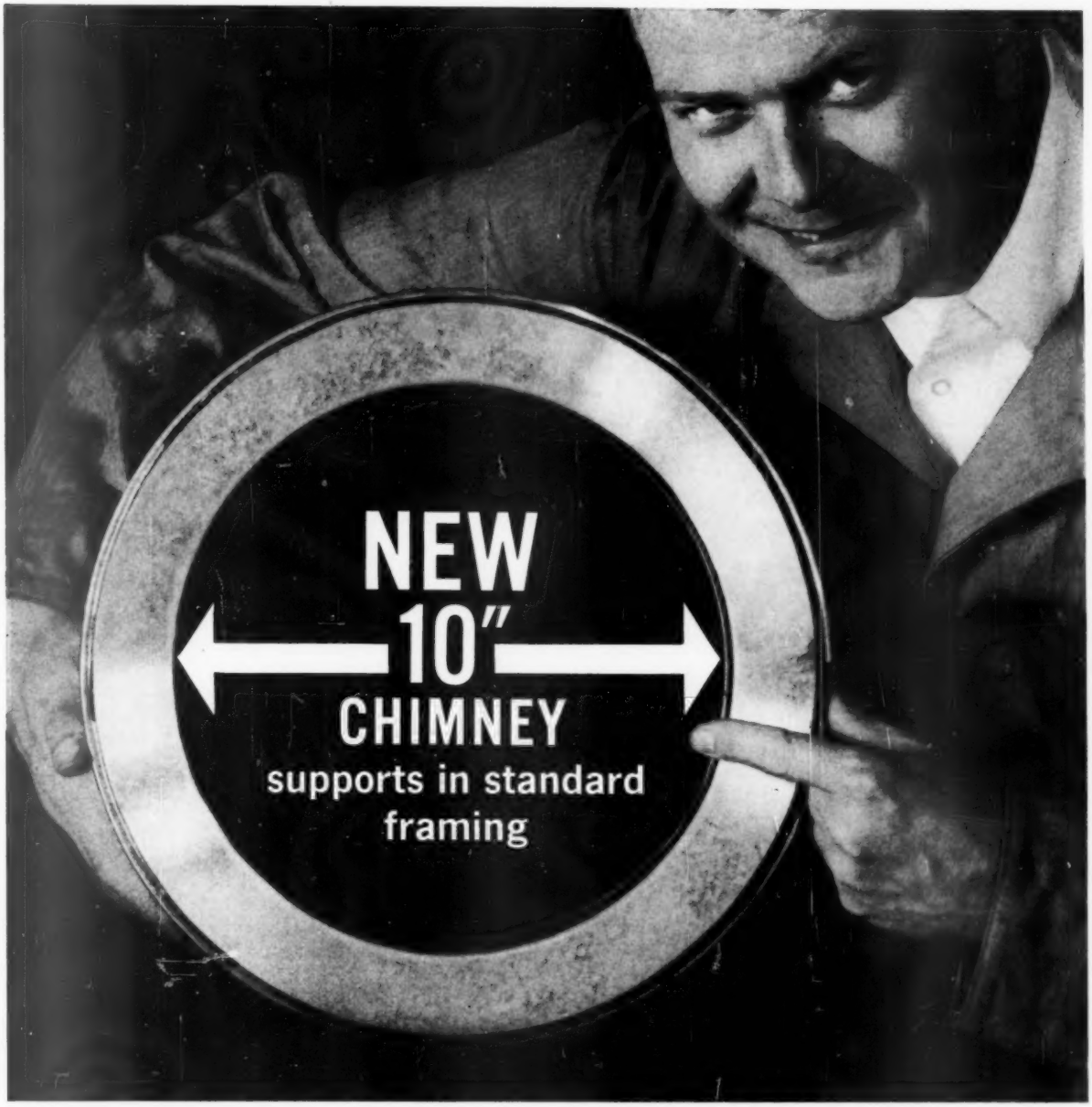
Fueloil programs were held at Waukesha, Watertown, Waupun, Monroe, Madison, Waupaca, Stevens Points, Fond du Lac, Manitowoc, Sheboygan, Ripon, Green Bay, Appleton, Oshkosh, Milwaukee, and Clintonville during October.

Similar groups met during November at Shawano, Wausau, Menomonie, Eau Claire, Chippewa Fall, Tomah, La Crosse, Janesville, Kenosha, Burlington, Beloit and Racine. Wisconsin Rapids and Marshfield meetings were held early in December.

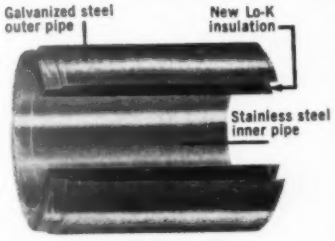
Hydronics Manufacturers exhibit at Builder Show

FOLLOWING through in its drive to capture a larger share of the new house market, the hydronic industry displayed its wares under an industry banner at the 18th Annual Exposition of the National Association of Home Builders, held in Chicago's McCormick Place, December 3 through 7.

Nine manufacturers teamed up with the national Better Heating-Cooling Council in a 100 foot long exhibit, one of the largest at the show, taking up 1,000 square feet of floor space. This was the second hydronic industry exhibit at the show. The first industry exhibit was last January.



the all-fuel 10-K by Metalbestos



with Lo-K, a revolutionary new insulation

- 2" of Lo-K insulation in 10-K has insulating value of 35" of brick.
- Chimney capacity increased 100% yet supports in standard framing.
- Lightweight. One-man installation.
- Exclusive TWIST-LOCK coupling — no screws, masonry or mastic.
- Simple 3-step installation for fast job-site assembly.

The 10-K CHIMNEY is tested and listed by Underwriters' Laboratories, Inc.

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Maine Dealers attend management Conference

THE MAINE Oil and Heating Equipment Dealers Assn., Portland, Me., held their Fall Management Conference November 1, at the Hotel Lafayette in Portland.

Subjects discussed at the session included recruiting and keeping service technicians, collecting accounts receivable, soliciting new accounts and degree day systems for the small oil heat dealer.

Officers elected at the seventh annual meeting of the Greater Hartford (Conn.) Better Home Heat Council were left to right: Marshall Elman, vice president; A. W. Nicholson, president; and Wilbur Whedon, treasurer.

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YOU GET MORE THAN HEATING OIL WITH A Sinclair FRANCHISE

When you take on a Sinclair Heating Oil franchise, you get more than just a fine product to sell. You get the advantages of top reputation, responsibility, integrity and good service.

Sinclair Heating Oil is one of America's best-known, best-selling heating oils—so different it's patented.

Constant research helps keep Sinclair Heating Oil ahead of competition.

A specialized training program creates new business.

You're assured a steady supply of heating oil—thanks to huge storage facilities.

It will pay you to investigate the many advantages of handling Sinclair Heating Oil. Write: Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

AT Sinclair WE CARE...ABOUT YOU...ABOUT YOUR BUSINESS

Sinclair Heating Oil

Sinclair HEATING OIL SuperFlame

Lockhart named President of Air Moving Association

THE ELECTION of Charles W. Lockhart to the post of president has been announced by the Air Moving & Conditioning Association, Inc., Detroit, Mich. Lockhart is vice president in charge of sales for Buffalo Forge Co., Buffalo, N.Y.

Other AMCA officers named for 1962 include L. A. Macrow, vice president; R. C. Niess, vice president; and J. F. Tobin, secretary-treasurer.

North Carolina Jobbers elect association Officers

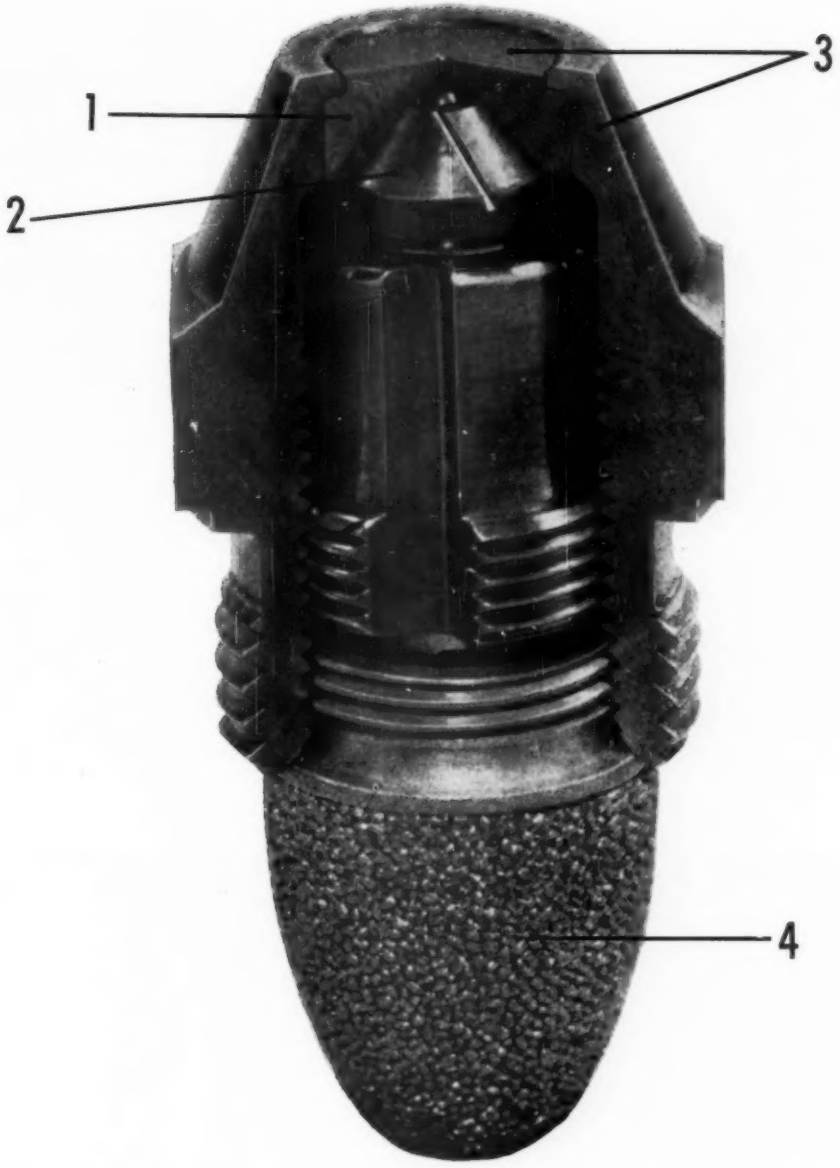
NEWLY ELECTED president of the North Carolina Oil Jobbers Association, Raleigh, N. C., is Ed P. Godwin, president of Godwin Oil Co., Inc., moving up from the group's vice presidency. His election took place during the association's Annual Convention at Asheville, N. C.

Other officers elected were: Sink A. Walser, vice president; F. Shelby Alford, vice-president, fueloil; Hoyle T. Efird, treasurer; and Don M. Ward, re-elected executive secretary.

Rochester OHI hears Fred Burroughs

THE ROCHESTER (N. Y.) Oil Heat Institute, held a business meeting October 26 at the Hotel Manger in Rochester.

Principal speaker at the session was Fred Burroughs, National Oil Fuel Institute, New York, N. Y.



4 REASONS WHY DELAVAN NOZZLES MAKE BETTER FIRES!

1. Delavan's orifice insert is made separately and pressed into the nozzle body. Since this insert forms the two most important parts of the nozzle, the orifice and the swirl chamber, it is very important that it be precision made, in a separate manufacturing step.

2. The Delavan distributor automatically centers itself when it is tightened up against the orifice insert. The distributor is separate from the screw pin, crimped in loosely so it won't fall out. When tightened it is free to center itself in the swirl chamber perfectly. This accurate method of aligning the internal parts of your nozzle assures better, more uniform performance from Delavan nozzles.

3. Delavan manufactures the only Bi-Metal nozzle in the industry. Stainless steel where it's needed, in the orifice and distributor and brass for the body. The perfect combination for better performing, longer lasting nozzles.

4. Delavan's sintered filter does a more uniform filtering job, because of its domed shape. The layers of filtering powders are the same thickness all over the dome. This also helps the nozzle live longer.

In addition to these four exclusive features, Delavan nozzles are 100% flow tested at the factory. They are individually checked for capacity, spray angle and quality of spray. That's why more servicemen every day are insisting on Delavan.

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Manufacturing Company
WEST DES MOINES, IOWA

Canadian Representative—Ontor, Ltd., 12 Leswyn Road, P.O. Box 608, Station T, Toronto 10, Ontario, Canada

Oil Men's Club annual Meeting set for December

F. O. KOONTZ, president of Quaker State Oil & Refining Co., Oil City, Pa., was principal speaker at the Chicago Oil Men's Club's (Chicago, Ill.) Industry Luncheon, held October 26, at the Congress Hotel. November 9 was the date of the organization's Old Timers' Luncheon and Father and Son Luncheon, also at the Congress.

Scheduled for December are the Annual Meeting on the seventh and the annual Christmas party on the 21st. Both affairs are slated for the Congress Hotel.

Philadelphia Group holds Weights-Measures Panel

A WORKSHOP MEETING on weights and measures was held November 21 by the Greater Philadelphia Fuel Conference. The Commonwealth of Pennsylvania now checks and tests fueloil tank trucks, and this workshop had an informal panel presentation explaining procedures.

Serving to describe the new system were Weights and Measures officials, a representative from E. O. Habhegger Co., a member of a commercial testing agency and a dealer-member of the association who had already checked out his trucks.

Long Island OHI has Owen Oxley as Speaker

AT THE GENERAL membership dinner meeting of the Long Island Oil Heat Institute on November 8, Owen Oxley, Empire State Petroleum Association, discussed the statewide picture of the oil industry. The meeting was held at the Lawrence Country Club, Lawrence, N.Y.

The groups annual dinner dance will be held on December 14 at the Town House, Huntington Station.

Petroleum credit Managers have Meeting in Hempstead

THE LONG ISLAND Petroleum Credit Manager's Association held its monthly meeting on November 15 at the Flagstone Restaurant, Hempstead, N.Y.

Third chapter of the new credit manual was distributed and the subject, "Collection Techniques and Letters" was discussed.

Fred Burroughs Speaks at Chicago meeting

FRED BURROUGHS, Vice President, National Oil Fuel Institute, New York, N.Y., was the principal speaker at the Quarterly Membership Meeting of the Chicago Oil Burner Association, Chicago, Ill., held November 9 at the Sheraton-Chicago Hotel.

Burroughs described the progress made to date by NOFI and outlined plans for future improvements now being planned.

Delaware County Group holds annual Banquet

THE ANNUAL BANQUET of the Delaware County Fuel Merchants Association was held November 16.

Robert P. Gilmartin, Gulf Oil, demonstrated and described the new Gulf burner.

FEATURE AFTER FEATURE
...BY FAR THE FINEST!
Klenm®
FUEL OIL FILTERS
• Exclusive CHEMISTONE® Elements
• Choice of Glass or Metal Bowls
• 17 Models
• Shut-Off Valve (Optional)
The many exclusive customer-pleasing features that you get in Klenm Fuel Oil Filters are positive evidence of quality construction and performance. Repeat sales assure you of lucrative and continued earnings. For safety, economy of operation and trouble-free performance, you'll find it pays to recommend and sell Klenm Filters. See your jobber... or write direct.
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For: Central heating plants.
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For: Central heating plants.
Model JR-80—¼" opening
For: Space heaters, floor furnaces, etc.
*Model PK-150—¼" opening
For: Space heaters, floor furnaces, etc.
*Model FF-430—⅜" opening
For: Central heating plants.

NEW PRODUCTS

Ever-Tite Coupler gives added Protection to pressure Systems

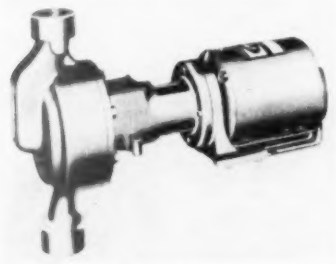
EVER-TITE's new "One-O-One" coupler for pressure systems has two bleed-off locks which give double protection when it is required — at disconnecting, if there's pressure in the line. The coupler disconnects with one operation and eliminates the use of spring-loaded valves.

The couplers are interchangeable with Heavy-Duty Ever-Tite adapters in all sizes.

Made by: Ever-Tite Coupling Co., Inc., 254 W. 54th St., New York 19, N. Y.

Taco 1600 Series high head Pump is expanded from six to 12 Sizes

TACO HEATERS has expanded its 1600 Series pump line from six to 12 sizes. Available with single or three-phase motors, they range in size from ¼ to 1 hp and operate at 1750 rpm. They feature dynamically - balanced closed-type cast-iron or bronze impellers. The shaft is precision ground stainless steel.



The 1600 Series pumps are designed and engineered to pump water against relatively high heads on low pressure systems. They are frequently applied for booster service.

Specially designed rubber mountings, sleeve bearings, mechanical seals and flexible rubber couplings assure quiet operation.

Made by: Taco Heaters, Inc., 1160 Cranston St., Cranston 9, Rhode Island.

OVERFIRING

UNDERFIRING

in a DYNATHERM *?*

IMPOSSIBLE!

DYNATHERM oil burning units operate at a constant maximum efficiency whether working for two hours on a mild day or 12 hours on a sub-zero day. *The air supply is fixed*, eliminating fuel-wasting overfiring and underfiring. *Draft adjustment is never necessary*. In fact, the only field adjustment DYNATHERM needs is the oil pressure. Every DYNATHERM is installed in one, compact, factory assembled, and inspected unit, ready to give your customers all the heat and hot water they'll ever need, summer or winter . . . and save them 25% to 40% in fuel besides.

write today for I.M.P. details.*

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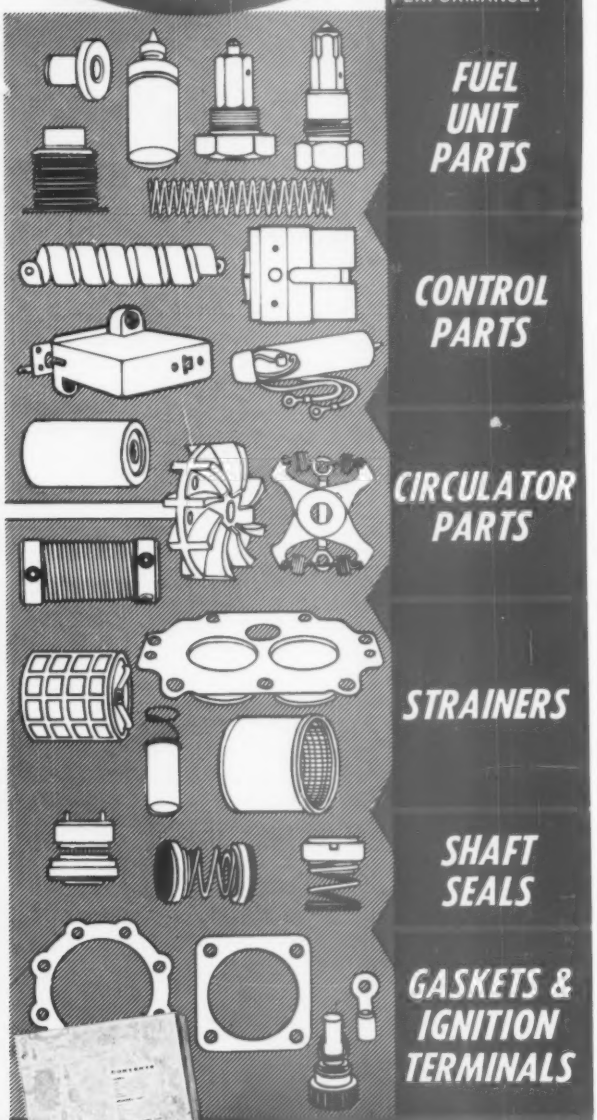
OTHER **BETHLEHEM** DIVISIONS:
BETHLEHEM FOUNDRY & MACHINE, PROCESS EQUIPMENT, SPECIAL CONTRACTS, CEMENT MACHINERY, ENVIRONMENTAL ENGINEERING

**Important Money Preserver*

You'll Cut Costly Servicing Time with Hydrovalve's OIL BURNER REPLACEMENT PARTS

...because Precision Engineering together with Modern Factory Inspection Methods — are your assurance of LONG-LASTING, TROUBLE-FREE PERFORMANCE!



Your friendly Oil Burner Jobber stocks the HYDROVALVE Line. Ask him for a copy of Catalog #60, or write direct.

Hydrovalve CO., INC.

1319 Utica Avenue, Brooklyn 3, N. Y. / NAvarre 9-1234

Hydronic modifier linear valve Plugs added to Honeywell commercial Line

A NEW SERIES of "modified linear" valve plugs for use with steam and hot water valves has been introduced by Honeywell's Commercial Division. They incorporate the slow-opening characteristics of equal-percentage plugs at light loads with the stability of an ordinary linear plug under heavy loads.

They can be used with pneumatic, electric or electronic valve actuators and can also be used in certain hot-water applications. Range of Cv valves is from 0.40 to 100; valve body sizes are from one-half to 3 inches.

Made by: Commercial Div., Minneapolis-Honeywell, 2753 4th Ave. S., Minneapolis 8, Minn.

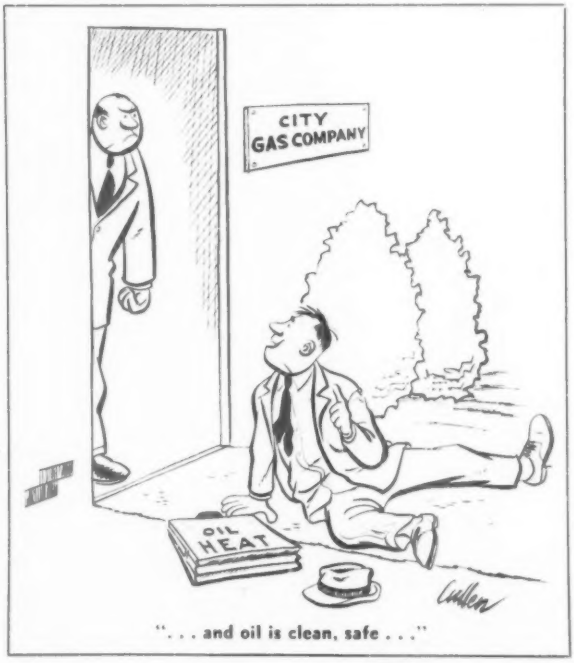
Motorola expands Line with Unit for heating, airconditioning Firms

A MOBILE UNIT designed for heating and airconditioning dealers has been added to Motorola's line of two-way radios.

This Business "Dispatcher" Radio has fully transistorized receiver and power supply, compact size and low power requirements.

Providing 15-watts power output, the new unit is available for operation on frequencies in the 25-50 and 150-174 megacycle bands. Compact size enables mounting of a single-piece unit under the dash or on the floor.

Made by: Motorola, Inc., Communications Div., 4501 W. Augusta Blvd., Chicago 51, Ill.



". . . and oil is clean, safe . . ."

NOW AVAILABLE

The NEW REVISED EDITION of

OIL BURNERS

By Kalman Steiner

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Industrial Oil Burners

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Electric Control Systems

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Ignition Methods

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Service and Maintenance

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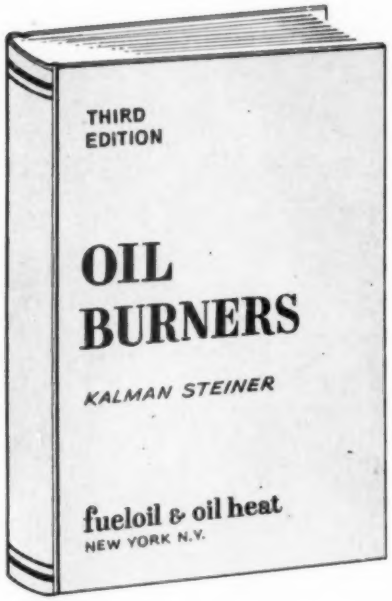
Draft • Combustion Control



This NEW THIRD EDITION gives an exhaustive and comprehensive treatment to the subject of oil heating. It covers fuel oil, oil burners—domestic and industrial—accessory equipment; electronic control devices and systems; ignition methods; fuel oil pumps; strainers and flow regulators; refractories; boilers and warm air furnaces; draft and combustion control; preheating; storage tanks; service and maintenance; and control of the heating system. There is additional information on commercial and industrial oil burners using number 4 and 5 oils, and the latest information on all new electronic controls. The book describes basic concepts and essential engineering as well as actual practice. Ideal for on the job use of designer installer and servicemen or as a text book for those learning the industry. 6¼" x 9¼" with hard cloth cover—contains many charts and photographs, 536 pages. ORDER NOW!

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Send your order to fueloil & Oil heat 2 West 45th St. New York 36, N. Y.

Yes, please send me _____ copies of the NEW REVISED EDITION of OIL BURNERS by Kalman Steiner @ $6.00 per copy.

My Remittance of $..... is enclosed. (Include 25c for postage and handling.)

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NOW! There is ONE BEST WAY to Humidify!

Introducing... the completely

NEW AUTO FLO MODEL 40 POWER HUMIDIFIER

MODEL 40-W WITH
FEATURES DEALERS AND CONTRACTORS DEMAND

- All Steel Cabinet
- Mounts Flush on Plenum or Duct
- No Drain Connections Needed
- Precise Automatic Humidity Control
- Easy-Access Service Door
- Special Evaporator Filter Removes Air-Borne Bacteria
- Entire Pump and Control Assembly Isolated for Easy Servicing
- Evaporates up to 6.4 Lbs. of Pure Water Vapor per hour

MODEL 40-SW POWER HUMIDIFIER, is recommended for areas with very hard or domestically softened water. This unit has a solenoid controlled water supply and continuous drain which will flush away most mineral deposits.

SEE YOUR SUPPLIER NOW!

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Please rush complete information ☐ NEW Auto Flo MODEL 40 POWER HUMIDIFIERS ☐ Automatic HUMIDIFIERS ☐ AIR FILTERS ☐ FUEL OIL FILTERS

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ADDRESS_____

CITY_____ ZONE____ STATE_____

Quiet Automatic adds Boiler; increases furnace Capacities

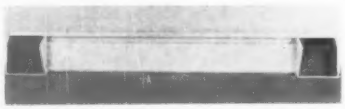
A LINE of square, steel-jacketed, steel oil boiler-burner units (illustrated) has been announced by Quiet Automatic. All four sizes are equipped with 200 gal. or larger domestic hot water coils, master relay and low-voltage thermostat. A circulator, relief valve and Quiet Automatic gun-type oilburner also is standard equipment.

The company also announces that Btu capacities and cfm ratings have been increased for 19 models of oilfired furnaces. These are seven horizontal models from 85,000 to 335,000 Btu capacity; four Hi-Boy and three counterflow models and five Lo-Boys from 100,000 to 250,000 Btu capacity.

Made by: Quiet Automatic Burner Corp., P.O. Box 9022, North Station, Newark, N. J.

Baseboard Heater with built-in Thermostat made by Air-X Industries

AIR-X INDUSTRIES has developed a baseboard heater with a built-in thermostat. It also features an ozone generating air purifier as an allergy reliever. This unit makes it possible to independently heat any room while others are being cooled. A "Fan Base" moves room air mechanically over a hot water or steam coil. The heat output is increased so that a small heating surface length can be used to provide the same amount of heating as a longer baseboard.



Made by: Air-X Industries, Inc., 1210 Randall Ave., New York, N. Y.

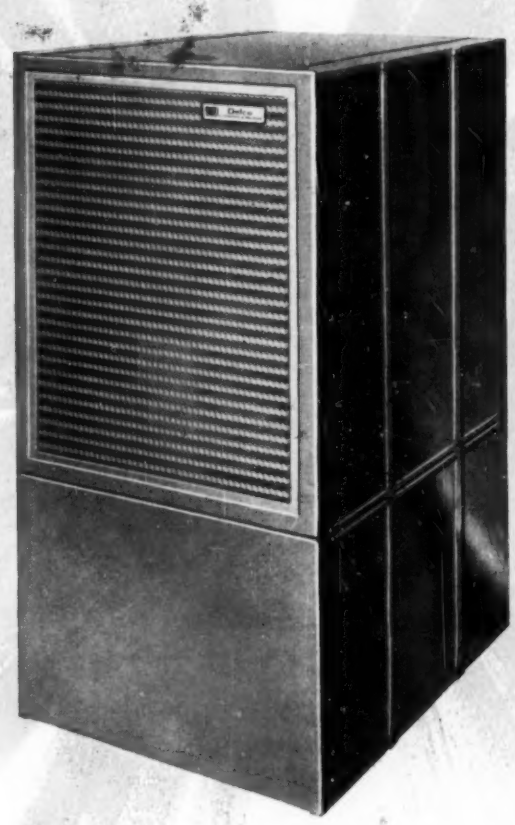
Danfoss 'Universal' Thermostats designed for replacement Jobs

THE DANFOSS ST-KT "Universal" low-voltage, wall-mounted thermostat is intended to replace conventional thermostats; its size and rectangular design is described as identical to practically all these thermostats. Design features include: an adjustable differential screw on the inside of the thermostat; single-pole, double-throw switch, enabling it to be used for heating, cooling or summer-winter thermostat; internal plastic housing to protect electrical contacts. The thermostat employs a double bimetal coil, silver switch contacts and has a temperature range from 40 to 80 or 60 to 96 degrees.

Made by: Danfoss, Inc., 115 Dell Glen Ave., Lodi, N.J.

NEW—*at no extra cost*

OIL FURNACES DESIGNED FOR YEAR-ROUND HOME CONDITIONING



SALES APPEAL—based on what dealers have told us they want—that's what you'll find in this compact, efficient GM-Delco Conditionair with completely enclosed burner. It includes a long-life heat exchanger, an extra-high capacity blower with power to spare for any air conditioning application, an air filter, an insulated ribbed case and accurate positive-action controls. More than that, this new GM-Delco Oil Conditionair is ENGINEERED FOR EASY INSTALLATION OF SUMMER AIR CONDITIONING FOR COMPLETE YEAR-ROUND COMFORT BY THE HOUSEFUL.

UNIQUE FEATURES— • *Aerodynamically engineered heat exchanger*—of tear drop design—delivers efficient heat transfer and provides ample air-handling capacity for summer cooling. • *Ready for installation*—it's completely wired; the burner is installed, and so is the fan and limit switch; and the primary control is conveniently mounted on the burner. • *Trouble-free maintenance*—front panels can be quickly removed for easy access to oil burner controls and accessories. Available in a complete line from 67,000 to 150,000 BTU/hr in either upflow or downflow models.

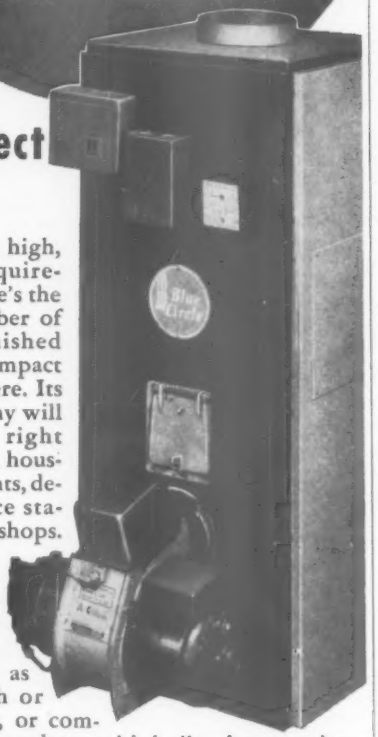
YOU'LL LIKE TO SELL THIS ONE—it performs well without call-backs, because it's built with General Motors reliability. For complete specifications write the Delco Appliance Division, Dept. F-1, General Motors Corporation, Rochester 1, New York.

Outstanding dealers by the hundreds have identified their future with the GM-Delco Key Dealer Plan in the past year. A nationally accepted brand name . . . sound and stable pricing . . . dealer listing in national ads . . . a great new line of Delco products . . . are among the many reasons behind the popularity of the GM-Delco Key Dealer Franchise.

GM Delco 365 CONDITIONAIR

DUNKIRK

NEW Blue Circle SMALLEST BOILER



Your Perfect Deal...

If your standards are high, but your heating requirements are modest, here's the newest, *smallest* member of Dunkirk's distinguished Blue Circle family. Compact enough to *fit* anywhere. Its efficiency and economy will amaze you. Just the right size for small homes, housing projects, apartments, detached wings, service stations, small stores and shops. And the price is as small as the boiler. Oil fired...Hot water ...Cast iron Blue Circle Lexington Boilers available as basic units with or without burner, or complete Lex-Pak package with boiler, burner, circulator, tankless heater if desired, and all controls installed ready to hook up. Open front (flush) or fully enclosed (extended) jackets. Also 5, 6, 7, 8 section sizes. Send *today* for descriptive literature, specifications, prices, and name of nearest warehouse.

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RADIATOR CORPORATION
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Member: Institute of Boiler and Radiator Manufacturers

Find-a-Fill locates fill Caps when They are covered with Snow

FIND-A-FILL is a device which facilitates location of underground fueloil tanks when snow is on the ground. Adaptable to all popular makes of fill caps, Find-A-Fill consists of a stainless steel flexible locator rod that extends up to 24" above ground.

It is constructed of very thin and flexible material to render it harmless to children or animals. When not needed the locator rod is pushed through the Find-A-Fill gland to be stored within the fuel tank fillpipe.

Made by: Cost Reductions, Inc., Springdale, Conn.

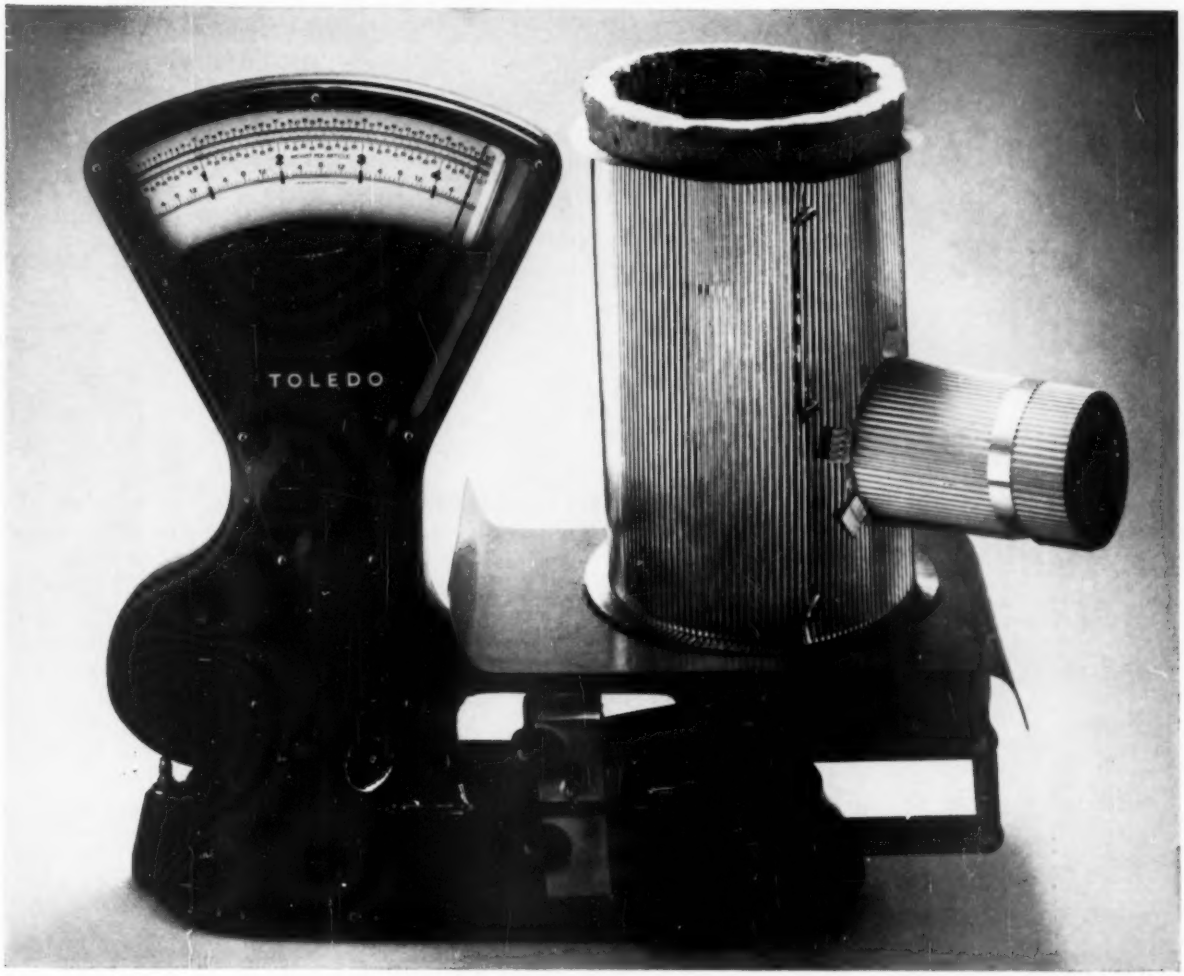
Thatcher Furnace adds Series of Lo-Boy, oilfired Units

THE NEW SERIES LO, Lo-Boy oilfired winter airconditioners has been added to the Thatcher line. Designed in two parts, the factory-assembled blower section can be installed to the rear, right or left of the heating section.

The heat exchangers has an oversize "wrap-around" design for faster heat transfer; a large front clean-out panel provides access to the radiator above and below the baffle. The four models provide an input range of 101,000 to 168,000 Btu with gph ratings of .70 to 1.20.

Made by: Thatcher Furnace Co., Garwood, N. J.

"Boy! Talk about poetic justice — my TV repairman's burner quit."



4½ pounds of proof...

relining combustion chambers can be profitable... with J-M Cerafelt®

Sure, relining heating units used to be unprofitable—what with 200 pounds of materials to lug around and a five-hour installation job by the serviceman. But now, with a Johns-Manville Cerafelt Kit, you can actually *make money* when you reline worn-out combustion chambers or upgrade existing chambers.

The complete Cerafelt Combustion Chamber Kit weighs only 4½ pounds . . . small enough to store several of them in your serviceman's car or truck. Each kit contains all the necessary materials for a complete relining job: sheets of Cerafelt refractory fiber felt (the same material used to protect the astronaut in the Mercury spacecraft), prefabricated steel backing, accessory items, and an illustrated installation instruction sheet. Tools? Just a pair of scissors and a bread knife, that's all. There's no cement-mixing . . . no heavy refractory brick lining . . . and no mess to clean up. The entire job is done quickly and cleanly, with improved combustion and reduced noise. Small wonder Cerafelt makes relining chambers profitable.

Cerafelt chambers are efficient and economical, too! In most cases, they cut fuel costs up to 20%, as reported by enthusiastic homeowners. For full details, write to E. D. Flavin, Vice President, Johns-Manville, Box 14, New York 16, N. Y. In Canada: Port Credit, Ontario. Cable address: Johnmanvil.

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AN INSULATION FOR EVERY COMMERCIAL AND INDUSTRIAL USE

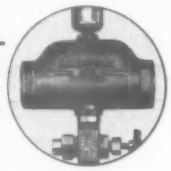
JOHNS-MANVILLE JM PRODUCTS

Hydronics Made Profitable with

THE EX-TROL® SYSTEM

THE MODERN EX-TROL TANK

Heart of the compact Ex-Trol System — a sturdy steel tank with rugged flexible diaphragm. Provides perfect air-cushion. Prevents water-logged tanks.

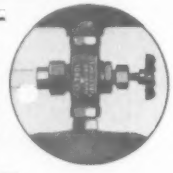


THE EX-TROL AIR PURGER

This part of the Ex-Trol system continuously separates air from heating system water to eliminate air noises.

THE EX-TROL FLOAT VENT

An advanced type air vent with a unique construction which insures fast venting — positive shutoff, trouble free performance — no spitting or leaking. No separate air chamber is required.



THE EX-TROL AUTOMATIC FILL-VALVE

Full sized waterways provide fast filling and eliminate the need for by-passes. The Ex-trol charge pressure uses the diaphragm to operate the valve; thus whenever system pressure falls below preset level make up water is added automatically.

ALL THIS ADDS UP to easier installations, less call-backs, happier customers and more profit for you! Ask your wholesaler for Extrol Bulletin 100-A.

311-1

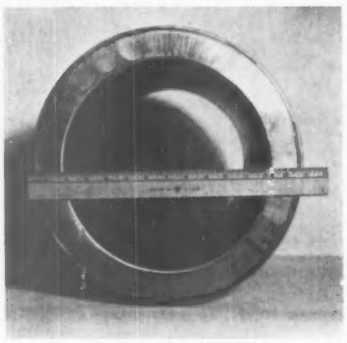
American TUBE & CONTROLS INCORPORATED

West Warwick, Rhode Island

. . . New Products

Metalbestos new all-fuel Chimney has more Capacity in standard Framing

THE MODEL 10-K all-fuel chimney by Metalbestos provides greater venting in standard framing. It has an inside diameter of 10" and a total venting area of 78.5 square inches. It has an outside diameter of 14" and is listed by UL for installation at 2" clearance to enclosures and 1" clearance to roof structure.

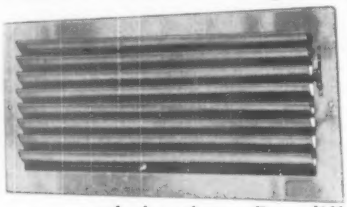


The chimney was made possible by the development of a new insulating material called Lo-K in recognition of its low K factor. The complete chimney package — support, chimney lengths and termination — is ordered from one measurement, the distance from the bottom of the support joists — floor or ceiling — to two feet above the roof ridge.

Made by: Metalbestos Div., William Wallace Co., Belmont, Calif.

Air Controls curved blade Register for ceiling, sidewall Installation

A SERIES of Air Control registers and grilles with curved aluminum blades are designed for ceiling or sidewall installation. The curved blades extend beyond the grille and adjust individually; horizontal multilouver valves in the rear control air volume. Four different face designs provide 1-, 2-, 3- or 4-way air pattern control.



All four types come in eight sizes, ranging from 8" x 6" to 14" x 14". Deflection can be changed easily and the system can be balanced at the face of the register by setting the adjustable stop on the operator handle to limit valve opening.

Made by: Air Control Products, Inc., Coopersville, Mich.

Chrysler Airtemp offers expanded redesigned oil Furnace for 1962

TWENTY oil furnaces will be in the expanded, redesigned line of Chrysler Airtemp. Three models of Lo-Boys will be offered; four Lo Hi-Boys; three counterflows; and ten horizontal models.

Major changes in the horizontal line are new heat exchangers and combustion chamber. The units range from 65,000 Btu to 250,000 Btu.

Made by:Chrysler Airtemp, 1600 Webster St., Dayton 4, Ohio.

WRITE
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for choice
SELLING space
at the

24th National Oil Heat and Air Conditioning Exposition

—in conjunction with 40th Annual Oil Heat Industry Convention (which includes 5 days of big dealer sessions)

Apr. 9-12, 1962 - Conrad Hilton Hotel
Chicago

If you want to sell the dealers, jobbers and distributors who account for the bulk of the nation's business in oil heating equipment, accessories and heating oils . . . if you want to sell the manufacturers and refiners . . . here is the place to exhibit. This biennial high point in the heating industry will take place at a time when Oil Heat is taking giant steps forward—with a new, vital all-industry organization—with new research—with new programs—with a new future.

The NOFI Convention—at the same hotel—will attract the cream of the industry. Book your exposition space now.

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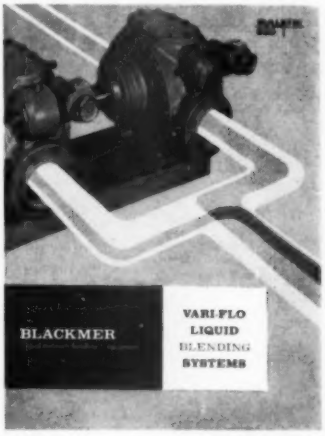
c/o National Expositions Co., Inc., 17 E. 45th St., N.Y. 17, N.Y. Phone MUrray Hill 2-7831.

WHISTLER

Model E, the only whistle you can install without disturbing the present piping. Model D for new installations.

APPLIED MECHANICS COMPANY
381-389 CONGRESS ST., BOSTON 10, MASS.

FUEL OIL BLENDING WITH PUSH BUTTON TENDING



IN-LINE BLENDING FOR ANY BUDGET

New Blackmer Vari-Flo in-line blending systems score again with fuel oil distributors and dealers. You simply dial the blend ratio with this unique system, blend components right in the pipeline, deliver directly into tank trucks. Eliminate stratification, speed loading time. Reduce requirements for storage tanks, piping and inventory of blended stocks. Extremely accurate and automatic, yet easy and inexpensive to operate and maintain. Vari-Flo Systems are proven in the field—blending intermediate grades to meet exacting industrial demands. Let us show you what Vari-Flo Blending has done for other operations like yours. **See us in Refinery Catalog or write for free Bulletin 650F.**

"liquid materials handling"® equipment
BLACKMER / *blending systems*
BLACKMER PUMP COMPANY, GRAND RAPIDS 9, MICHIGAN

with steam heat...

the SECRET is in the VENTING

The faster you vent air out of radiators . . . the faster you get heat into radiators . . . this is the secret of efficient steam heating, and why Gorton Valves provide much larger air outlets for venting air faster.

With Gorton Valves you save on fuel every time the thermostat calls for heat, as Gorton Valves make radiators heat fast with ounces of vapor instead of pounds of pressure.

FAST VENTING VALVES

To make all radiators heat quickly and evenly, there's a fast venting Gorton Valve that's just right for every radiator. Available in 5 sizes for radiators and 2 sizes for mains. A correctly sized Gorton Valve installed on each radiator provides fast, even, comfortable heat in every room.

For steam heat that can't be beat, insist on Gorton Valves. Available from leading wholesalers everywhere.

FOR EVERY STEAM HEATING SYSTEM

GORTON VALVES

Cranford, New Jersey
ESTABLISHED 1887

'THE SURE CURE FOR COLD RADIATORS'

. . . New Products

Straight-through flow motorized zone control Valve made by Cash-Acme

CASH-ACME has announced a new series of straight-through flow hydrozone motorized zone valves for use on hydronic heating and cooling systems and for steam up to 10 psi. Special features are: visual stem indicator, to eliminate leaking at the valve stem; a special Viton "O" ring; 100% shutoff.

Type Z-108 with ¾" sweat copper inlet and outlet and the Type Z-208 with 1" sweat copper inlet and outlet are included in the series.

Made by: A. W. Cash Valve Mfg. Corp., Decatur, Ill.

G-E transistorized two-way Radio features a compact control Head

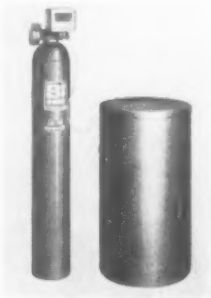
GENERAL ELECTRIC has introduced a trunk-mount two-way transistorized radio. A new control head, 2½" deep, 2¾" high and 4⅝" wide, has a three position Off-Standby-On switch. When the switch is on "standby", the radio is ready to receive a call and consumes only .040 amperes from the battery. The standby switch permits the driver to turn the car's engine off and leave the radio completely operative and active.

The equipment is available in high band and low band frequencies, 25 to 54 mc. and 130 to 174 mc. Power output up to 100 watts is available.

Made by: General Electric Communication Products Dept., Lynchburg, Va.

Bomarc fiberglas automatic water Softener in full range of Sizes

BOMARC INDUSTRIES is offering a fiberglas automatic water softener in a full range of sizes. "Fleetwood Series" has resin already contained in the units, reducing installation time. Controls are made of brass, distribution is internal and there are few moving parts. Units automatically regenerate and an automatic bypass maintains a continuous supply of water, even during regeneration.



There are five models.

Made by: Bomarc Industries, 17 Nassau Ave., Inwood 96. L.I., New York.

New Units providing controlled Humidity developed by Skuttle

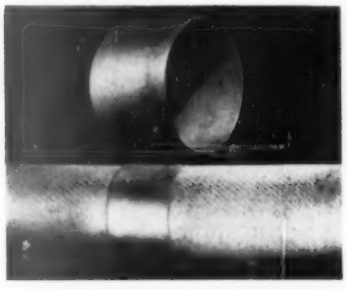
A NEW FURNACE HUMIDIFIER, the Drumatic Model 90, has been developed by Skuttle Manufacturing Co. It is mounted on the warm or cold air plenum and is simple to install. It utilizes a polyurethane foam evaporating pad on a motor-driven spoked drum which rotates in a pan of water.

The 24 - volt moisture-sealed motor is factory pre-set and uses only 5 watts per hour. Calcium deposits will form on the evaporating pad eliminating mineral dust in the air. Replacement is economical.

Made by: Skuttle Manufacturing Co., Milford, Mich.

J-M Ductite Coupling for air Duct meets revised FHA requirements

A COUPLING for use with Transite air duct, has been designed by Johns-Manville, to meet FHA Revision No. 3 to its Minimum Property Standards. The coupling assures a water - tight joint when used with J-M asbestos cement duct.



Coupling is a reinforced product using inorganic asbestos, bonded with waterproofing ingredients.

Made by: Johns-Manville, 22 E. 40th St., New York 16, New York.

G-E Quik-Attach Airconditioner features pre-charged Tubing

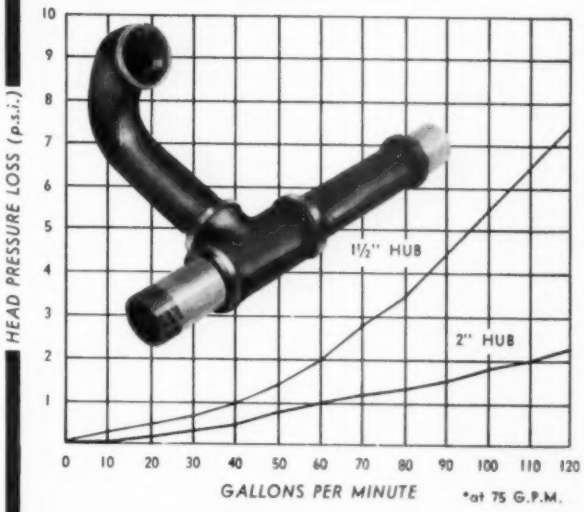
GENERAL ELECTRIC'S Model TA22G airconditioner in the 2-ton range combines split-system flexibility with the advantages of factory-sealed integral units. The condensing unit can be installed outdoors, with the cooling coil connected to the outdoor unit with pre-charged tubing using G-E developed Quik-Attach fittings.

The unit also features G-E Spine-Fin condensing coil, using thousands of aluminum "spines."

Made by: General Electric, Troup Highway, Tyler, Texas.

Did You Know?

REELS WITH 2 inch HUB ASSEMBLIES CAN REDUCE LINE PRESSURE LOSS UP TO 58%*



Hannay Hi-Capacity reels are specifically designed to drastically reduce the pump pressure head required to deliver at flow rates from 50 to 150 G.P.M. The chart above graphically demonstrates the reduction in pressure loss through the reel when 2" hubs are used instead of the conventional 1½" hub. Installed with high performance pumps, meters and other components, these reels will give you top efficiency from tank to nozzle.

For complete specifications and prices, see your equipment dealer or write for FORM H-205.

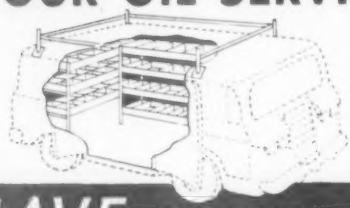
REELS BY HANNAY

CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

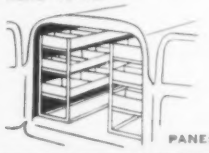
MODERNIZE YOUR OIL SERVICE TRUCKS

STOCK and STORAGE RACKS
designed for your Service Trucks

Built for long life of steel. All shelves with adjustable bins. Models to fit all style bodies quickly and easily installed with simple hand tools.



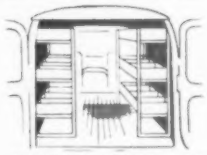
VAN TYPE BODY



PANEL BODY

SAVE BUY DIRECT ! !
EASILY SELF INSTALLED

SAVE TIME and STOCK



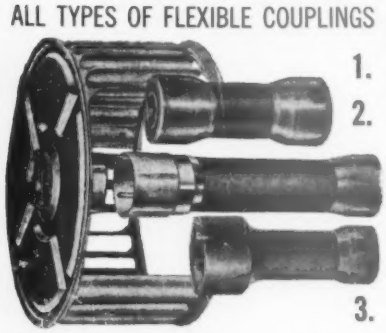
REAR VIEW ECONOLINE VAN

Write For Catalog And Prices

NEVLEN CO. INC. 3 GREENWOOD ST., WAKEFIELD, MASS.

Guardian

YOUR BEST SOURCE FOR
ALL TYPES OF FLEXIBLE COUPLINGS



1. Set Screw Dept. F-70 12 2. Splined Type 3. Jaw Type

Only GUARDIAN gives you these features—

- ROLL SPINNING—Exclusive process joins all three components at one time—while in final operating alignment.
- BRAIDED RUBBER—Ground to absolve true concentricity. Furnished in BUNA-N TUBE and NEOPRENE COVER. Lateral and angular alignment requirements fully met.
- ONE-PIECE DESIGN—Minimizes assembly and handling costs. Made to exact lengths required.

Over 6,000,000 Guardian couplings are on original equipment. This is your assurance of highest quality and universal acceptance in the field.

Write for free descriptive literature covering couplings, service men's couplings kits, oil valves and Quik Joint compression fittings.

Guardian PRODUCTS CORP.
COUPLING DIVISION
Dept. F-121, 1215 E. Second St., Michigan City, Ind.

MANUFACTURERS ACTIVITIES

Bell & Gossett to acquire Reznor Manufacturing Co.

BELL & GOSSETT CO., Morton Grove, Ill., has announced the proposed acquisition of Reznor Manufacturing Co., Mercer, Pa., on an exchange of stock basis. The newly acquired company will be operated as a wholly owned subsidiary of Bell & Gossett, with no proposed changes in management.

Repco Products Corp. created through Merger

ALL AMERICAN Products Co., Republic Products Co., General Heating Products Co., and W. H. Bunten Co., all based in Philadelphia, have merged to form the Repco Products Corp., an integrated manufacturer of a complete line of heating equipment, including baseboard radiation, convector equipment and heat transfer devices.

The research and development and manufacturing facilities of the new company are headquartered in Philadelphia, Pa. Sales offices for the firm are located in Boston, Hartford, New York, Philadelphia, Baltimore, Richmond, Clearwater, Detroit, Chicago, Salt Lake City, San Francisco, and Seattle.

Sales Engineering Course set for Carrier Dealers

CARRIER AIR CONDITIONING Co., Syracuse, N. Y., launched its 1961-1962 series of training courses for dealers and distributors with a three week session on packaged equipment sales engineering November 27 in Syracuse. A second class is planned for January 22, to end February 9, 1962.

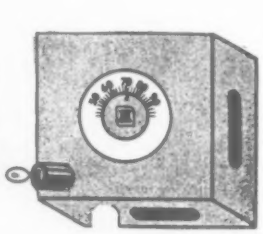
Also planned is a six-week course in application engineering for applied equipment dealers and distributors to begin January 8, and a two week course on small applied systems for packaged equipment dealers to start March 26.

TAMPERPROOF

THERMOLOK

INSTALLED IN 15 SECONDS!
NEW ROUND MODEL T86.

Though simple in design its rugged construction will stop tampering and unnecessary adjusting of heat controls by unauthorized tenants or personnel. Adjust thermostat — lock Thermolok and you're finished.

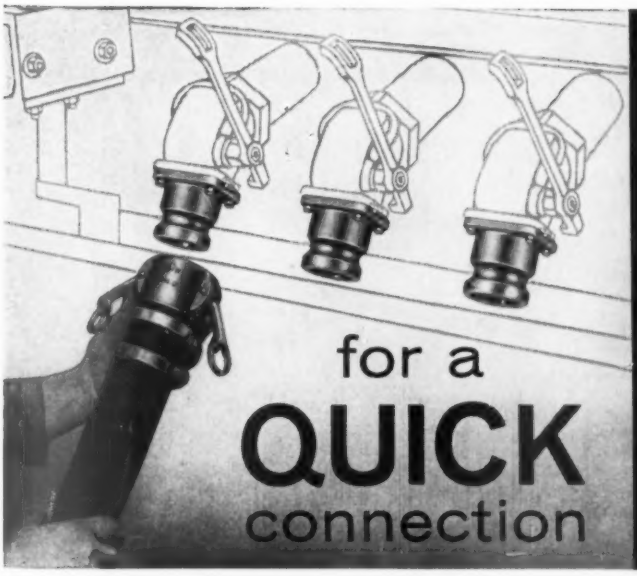


THERMOLOK
offers these important features:

- Quick, easy installation
- Eliminates wall damage
- Firm locking device
- No nails or screws required
- Lock it — Forget it
- Designed for modern decor

Many other types available. Ask your jobber or write direct to

THERMOLOK MFG. CO., Inc.
1099B TULIP AVENUE
Franklin Square, Long Island, N.Y.



OPW KAMLOKS

the fastest, safest, surest couplings known

When the hose line must be broken often and then recoupled with a reliable, tight, leakproof seal, use OPW Kamloks.

OPW Kamloks couple or uncouple in about 5 seconds — without using tools. An OPW Kamlok coupler on one end of the hose or pipe and an OPW Kamlok adaptor on the mating end are all you need.

Available in aluminum, bronze, monel, steel, stainless steel, semi-steel. More than 40 styles to choose from. Sizes: ½" to 6".

OPW Bulletin F-10-R and illustrated price list, PL-KAM give details. Write for copies today.

DOVER CORPORATION OPW DIVISION
2723 Colerain Avenue, Cincinnati 25, Ohio, KI 1-5400
Valves, couplings, specialty products for handling hazardous liquids

Sid Harvey of N. J. announces new Branch

SID HARVEY OF N. J., Inc., announced the opening of a branch located near Route 28, Roselle Park, N. J.

Dan DeCicco, former salesman for Sid Harvey of N. J., is the manager. Other Sid Harvey stores in New Jersey are located in Newark, Passaic, Trenton, Union City, Stelton and Merchantville.

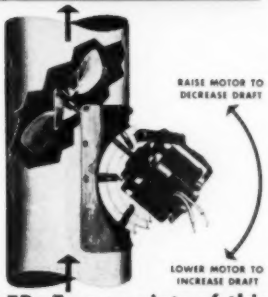
Permutit Company moves Headquarters to Jersey

THE PERMUTIT COMPANY, designers and manufacturers of water treatment equipment materials, a division of Pfaudler Permutit, Inc., will move in February, 1962, from its present headquarters in New York City to offices in Paramus, N. J.

The new headquarters will occupy 27,000 square feet of space in a one-story office building now being built on Midland Avenue in Paramus. It will be fully airconditioned and will include an employee cafeteria.

● If your heating equipment soots up or has odor or if you have scum on windows, you no doubt need a draft inducer. McLARTY FANS of Battle Creek, Michigan, make a good inducer that is easily and quickly installed on the smoke pipe from your furnace. For coal, oil or gas.

CALL YOUR HEATING MAN TODAY FOR FREE TEST AND ADVICE.



FREE MR. DEALER: Free reprints of this ad are available to enclose in your monthly billing. Write today!

NOW! PORTABLE SOOTMASTER FURNACE CLEANER

Easily carried — Heavy duty performance — more economical—maximum filtration — maneuverable — New elastic top filter bag snaps on and off for easy cleaning

601-8

COMES COMPLETE WITH
- 10′ duck covered hose
- 27" furnace cleaning tool
- 10 reusable paper filter bags
- Handy hose carrying cage
- Available without wheels

Distributed in Canada by:
Imperial Refractories & Equipment Ltd.

mastercraft INDUSTRIES INC.

109 Lanza Avenue · Garfield, New Jersey

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For Immediate Shipment

Check items you are interested in. Attach to your letterhead, mail for information, prices, FREE SAMPLES:

- ☐ Degree Day Cards
- ☐ Service Order
- ☐ Service Ticket
- ☐ Service Record Card
- ☐ Daily Record of Deliveries
- ☐ Service Dept. Record
- ☐ Authorized Receipt
- ☐ Door Knob Notice Card *
- ☐ Telephone Call
- ☐ Inter-Office Correspondence
- ☐ EZE Stick Pressure Sensitive Label *
- ☐ Price Charts
- ☐ Weather Temp. Recording Thermometer
- ☐ Safety Sidewalk Caution Signs
- ☐ Sort-O-Matic Rack

☐ **METERED ONE-TIME CARBON DELIVERY TICKETS** *(Truck—Bulk Plant—Gas Pump)*

My Name.....

Company.....

Street.....

City.....*State*.....

*Allow 2 weeks to imprint your copy.

Serving 20,000 Petroleum Firms Over 30 Yrs.

DEGREE DAY SYSTEMS

39-30F 58 ST., WOODSIDE 77, N. Y.

The Pickering Co., Salem, Mass., sponsored their eleventh annual "Oil Men for A Day" program under which twenty Salem high school seniors replace key executive personnel. Charles Andrias, Pickering president (standing) welcomes the students and introduces them to the executives whose places they took.

Johnson Furnace Co. will Relocate in '62

THE JOHNSON FURNACE CO., Cleveland, Ohio, recently acquired The Cockshutt Farm Equipment property in Bellevue, Ohio, where the company will be relocated after the end of the year.

Griffin Fuel Co. merges with Fuel Oil Service

TWO TACOMA, Wash., major fuel companies, Griffin Fuel Co. and Fuel Oil Service, announced a merger of their operations. The newly formed corporation is named the Griffin-Galbraith & Fuel Oil Service Co.

Officers of the new company are J. H. Galbraith, Jr., chairman of the board; Mark C. Dolliver, president; James S. Griffin, vice president and general manager; E. M. Murray, secretary; and Thomas S. Galbraith, treasurer.

CHECK THESE FEATURES

- ✓ Stops pulsating and chattering
- ✓ Increases heating efficiency and ouptut
- ✓ One unit handles furnace or boiler, incinerator and hot water heater on single chimney
- ✓ Keeps furnaces, boilers and chimneys free of soot
- ✓ Stops blow-back of poisonous fumes
- ✓ Ideal for homes with outside chimneys
- ✓ Fireplace units with special fittings for direct installation into chimneys with single or two-speed motors available

Will operate with temperatures up to 1700 degrees

A COMPLETE LINE OF RESIDENTIAL AND LIGHT CONSTRUCTION MODELS

SIZES AVAILABLE
4 INCH
5 INCH
6 INCH
7 INCH

SIZES AVAILABLE
8 INCH
9 INCH
10 INCH

12 INCH

Patents
U. S. 2,722,372 and 2,855,874
British 802,920
Canadian 593,817
Other patents pending

10175-QD

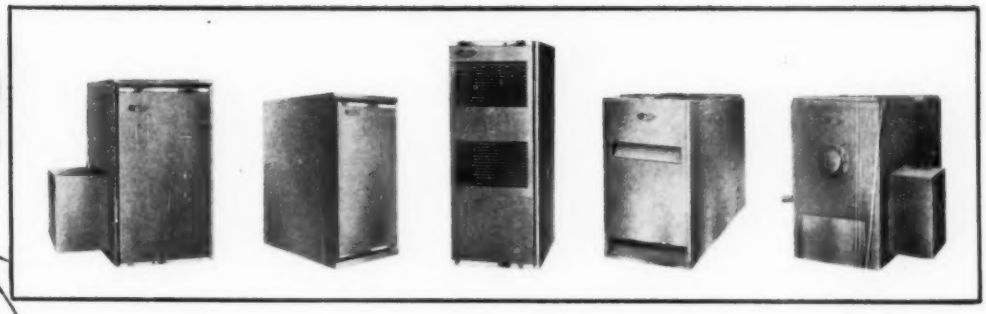
WRITE FOR NEW LOW PRICES ON ALL THESE MODELS

HEAVY-DUTY INDUSTRIAL UNITS AVAILABLE
12" 14" 16" 18" 20" 22" 24" 30"
Larger sizes can be made to order

For corrosive service all Quickdraft units are available in standard acid-resisting vitreous enamel, 316 stainless steel, rigid plastics (P.V.C) and with plastic or Fiberglas coatings.

Quickdraft CORPORATION

Box 1353-F, Station C, Canton S.W., Ohio



THEY ARE LOADED WITH SELLING FEATURES THAT PROVE THEIR VALUE IN PERFORMANCE AND ECONOMY OF OPERATION

E.F.M.'s continuing research and development gives you the finest in Automatic Home Heating Equipment. No matter what size, type or fuel used, an E.F.M. unit will be of the most advanced design and loaded with features to satisfy the most discriminating buyer. Why not help yourself to increased profits by investigating the many advantages of a valuable E.F.M. dealer franchise—Write today.

e·f·m ELECTRIC FURNACE MAN INC.

The Finest in AUTOMATIC HEAT

ELECTRIC FURNACE-MAN INC., EMMAUS, PA.

FURNACE BURNER UNITS—BOILER BURNER UNITS—CONVERSION BURNERS
OIL—ANTHRACITE—GAS

Galongage

The "Extra"

your customers will gladly buy!

A quality product by

APPLIED MECHANICS COMPANY

381 CONGRESS STREET, BOSTON, MASS.

"Instrument check-ups open the doors to profitable equipment sales."

The **FYRITE** Combustion-Testing **SERVICE KIT**

$56.70 FACTORY NET

Sold by Alert Heating Jobbers

. . . QUALITY INSTRUMENTS that Pay for Themselves

The FYRITE Service Kit provides a complete set of accurate, quality-built combustion-testing instruments at the lowest cost. It includes the FYRITE CO_2 Indicator which is unsurpassed for fast, accurate flue gas analysis; and also contains the popular DRAFTRITE Draft Gauge and the TEMPOINT 200°-1000°F. Dial Thermometer.

BACHARACH INDUSTRIAL INSTRUMENT CO.

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Send FREE Bulletin on Profitable Uses of Service Kit

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COMPANY_____

STREET ADDRESS_____

CITY & STATE_____

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THERE'S ONLY ONE THERMOLOK-ADAPTO *IGNITION TRANSFORMER* . . . AND ONE DOES THE JOB OF TWELVE!

Check these THERMOLOK-ADAPTO advantages:

- Reduces inventory space and costs
- Adaptable to 80% burners serviced
- Shielded to prevent radio or TV interference
- Eliminates temporary hook-up and call-backs
- Takes all standard terminal fittings
- Mid-Point grounded
- Has 3 sets of terminals
- Competitively priced
- U.L. and C.S.A. approved
- Guaranteed 18 months

These advantages speak for themselves. Available in 115V or 220V—see your local jobber today!

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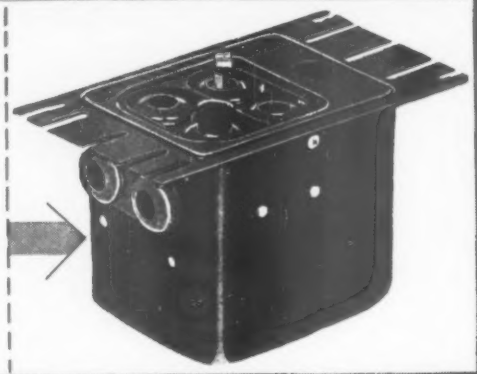

Harry Alter Co. moves into new Headquarters

THE HARRY ALTER CO., Chicago, Ill., national wholesale distributors of air-conditioning and refrigeration parts, has announced the opening of a new main office and warehouse building in Chicago.

The new headquarters, totaling over 65,000 square feet of enclosed space, will contain the company's general offices and operating facilities, as well as well as a large display space.

Rheem Research Center nearing Completion

A NEW BUILDING housing the Development Center of Rheem Manufacturing Company's Home Products Group, New York, will be completed about December 1 at Chicago, the company announces.

The center will devote more than 12,000 square feet to laboratories, model shop and research office space, and will serve as the headquarters for research activities carried on at Chicago and other Rheem plants in the Home Products Group.

Ray Oil Burner expands West German facility

A NEW ASSEMBLY and distribution plant in Wiesbaden, Germany, is being built by Ray Oil Burner Co., San Francisco, Calif. This facility will triple size of the present plant at Frankfurt.

The 20,000 square foot plant will employ 40 to 50 people.

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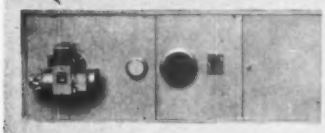
SUSPENDED
FURNACES
7 NEW SIZES



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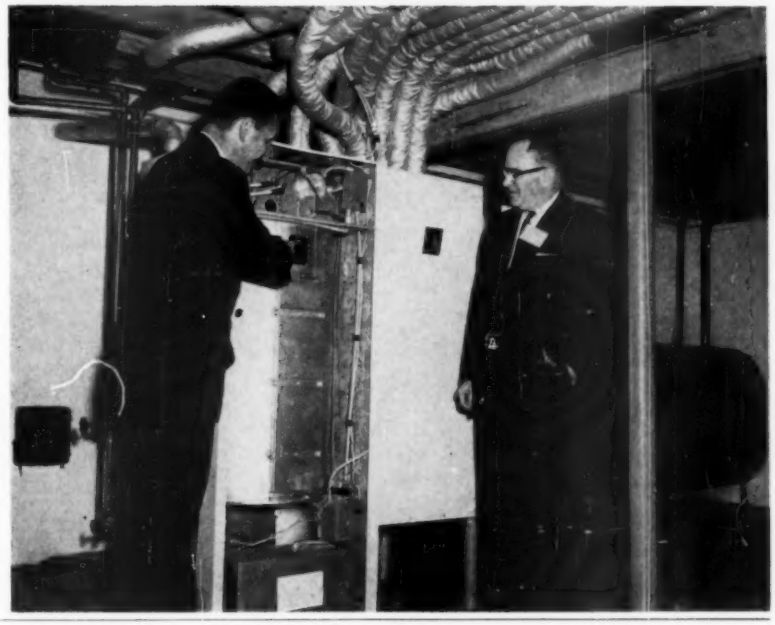
Wilmington Home Development uses Esso-Jet Heet Combination

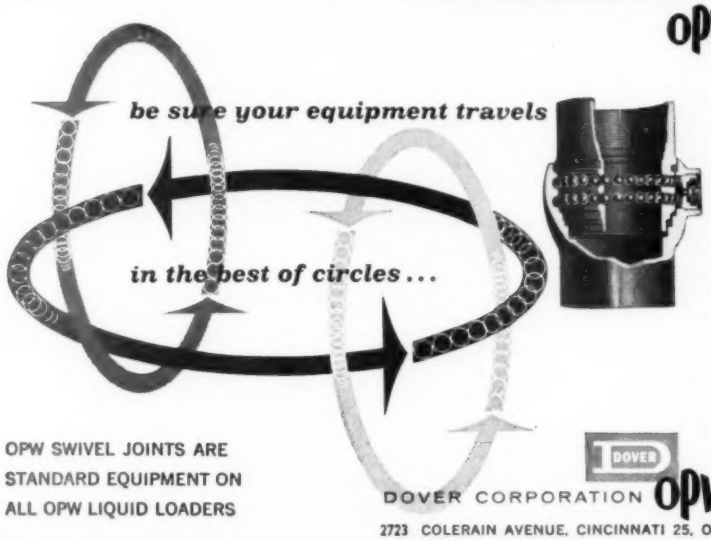


A NEW HOME development called "Brandywood" near Wilmington, Delaware, has a novel heating and cooling combination in which the responsibility is shared between Jet-Heet, Inc., equipment manufacturer of Englewood, N.J., and Esso Standard Div. of Humble Oil & Refining Co.

There will be 800 to 1,000 homes built in the tract over the next four years. Each will be equipped with Jet-Heet combination heating and cooling equipment, plus domestic hot water supply. Heated bathtubs are another novelty.

Esso Standard will supply service to the equipment as well as fueloil and "the performance of the equipment will be backed by Esso," according to the announcement.

In the model home photo are, from the left, A. Gray Magness, the builder, Chas. A. Newland, Esso division sales manager, and Calvin D. MacCracken of Jet-Heet, Inc. The interior photo shows MacCracken explaining the unit to Charles F. Blood, retail manager fueloil sales at Esso headquarters in New York.



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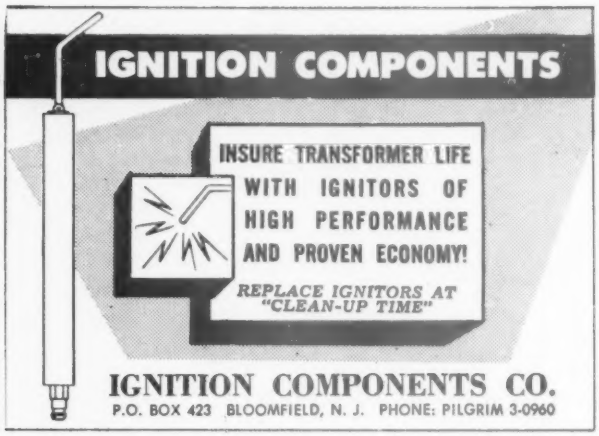
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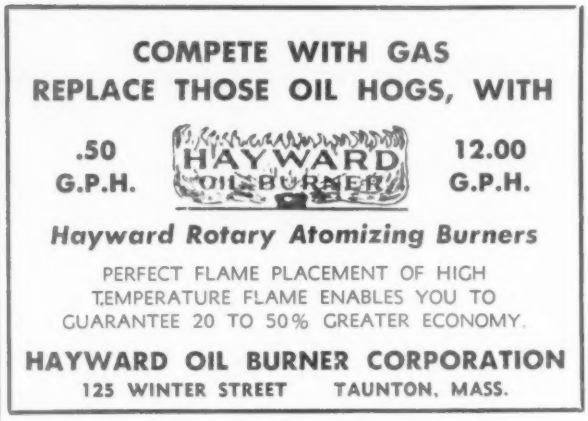
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Truck Talk

by Chet Cunningham

ONE OF TRUCKING MANAGEMENTS biggest jobs in the fuel-oil industry is the proper lubrication of equipment. When it comes to engines, the lube oil used must be changed periodically.

There are three ways to determine oil change periods. One is by hit or miss mileage estimates. Say every 2,000 or every 3762 miles you change oil. Another way is the opposite extreme: weekly laboratory oil examination. This is best, but very expensive.

In between these two is a compromise method. It is the shop analysis of oil in a less than chemical laboratory manner. There are several such systems on the market including Shell Oil Company's ADC Oilprint Analysis.

Another one is called Simplex Oil Testing Kit, and is made by Lengor Inc. of Annapolis, Maryland. It is a small kit for field or shop use that is relatively inexpensive.

The kit makes three tests: for abrasive solids, for acidity and for viscosity. The hand pump is used to draw a sample of fresh oil from the vehicle crankcase. One drop is put on a piece of blotter-like paper. The oil ring that forms is compared against a series of sample stains on a chart and matched with the closest. If the sample is a uniform shade of gray, the oil is still serviceable. But if the stain is dark in the center, the dispersants in the oil are depleted, and impurities are settling out. Both oil and filter should be changed.

Viscosity testing is handled in the two drip bowls. A standard viscosity oil with average dilution is in one jar. Sample oil from the engine goes in the other. Then both cups are filled and timed as the oil drains through a standard sized hole. The drain rate is inversely proportional to the viscosity. Dilution exceeding minimum level of acceptance is easy to check.

Want a "lean-mixture stratified charge, spark-ignited" type engine for your oil delivery routes? Texaco is developing one of this ilk. It has an injection system and combustion chamber system that varies the mixture richness within the chamber. Ignition takes place in the richest part preventing pre-detonation.

This is another one of the so-called multi-fuel engines that are popping up. GM has one out that can be converted to multi-fuel use for $12 per piston. Others are in experimental stages. The idea is that during an emergency, such rigs could burn almost any petroleum product and still perform well.

The handy rubber "V" belt is versatile, but when it breaks you need to know what went wrong, so it won't happen again. Here are some suggestions from B. F. Goodrich.

When a break is near a fabric cover rupture, look for dirt in the groove. Perhaps the belt was moved over a sheave or sharp object. Readjust the pulley when installing new belt and keep the grooves clean.

A snub break means the belt was slipping. Then suddenly the belt grabbed and the snap caused a break. Keep belts taunt to eliminate slips.

Belt distortion is caused by breakdown of internal adhesion or cord breaks from prying. Remedy: do not pry belts on the drive. Make sure sheaves are right diameter.

Watch these and other causes of "V" belt breakage, and your belts will last longer, and transfer the power required.

Trucking management means man-management. And here are some tips on handling men—truck drivers, installation men, servicemen.

- Familiarize workers with jobs and what's expected of them.
- Supply enough equipment, and good working conditions.
- Challenge employees to improve themselves.
- Help them advance. Never stand in their way.
- Give credit when due.
- Share responsibility for mistakes.
- Be loyal to employees under pressure or criticism.
- Reprimand in private and only when necessary.
- Tell employees of changes in advance.
- Assist in getting comparable jobs if a position is terminated.
- Treat employees considerately, firmly, justly.
- Share planning and details of what's coming.
- Show sympathy, helpfulness in difficult times.
- Give to employees respect, dignity, and consideration.

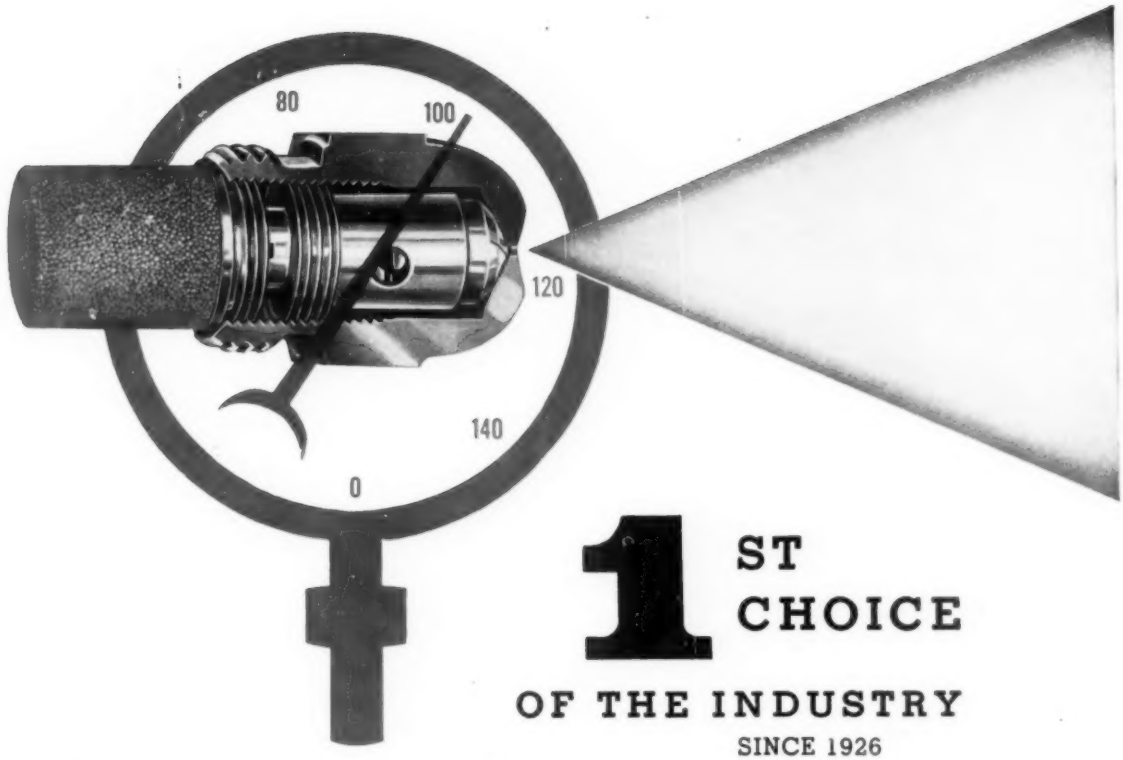
Get more wear and better mileage out of your truck tires. B. F. Goodrich offers these suggestions:

Overinflation and underinflation are two tire wear causes. Overinflation can seriously damage your tires. It does not compensate for overloading. It does not add strength to the tire. In fact, it actually weakens the cord body by reducing its ability to absorb road shocks.

Overinflation leads to: rapid wear in the center portion of the tread; increased tendency toward bruises and impact breaks; excessive strain on beads and rim; abnormal tire growth, stretching of tread and tread cracking; abnormal stresses and strains in the tread that lead to separation; more cuts and snags; harder riding and reduced cushioning leading to increased upkeep cost on equipment; reduced traction and skid resistance because less tread contacts the road.

Underinflation is bad too. Tires are designed to operate at certain recommended inflations which provide normal flexing with proper deflection and road contact. Underinflation leads to: tread wear on shoulders; irregular tread wear; excessive heat causing ply separation; increased tendency to bruise and tread separation.

For the best tire wear, inflate to recommended pressures when tires are cool. Check pressure regularly. Tighten valve caps, catch slow leaks. Lower tire pressure if your load is usually below maximum. Never bleed tires to relieve build-up. If excessive build-up does occur, either your load or speed or both must be reduced. Use the type and size tire that has the correct capacity for your load. Check your tires, save your checkbook!



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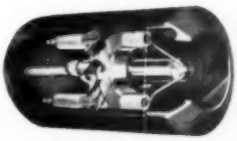

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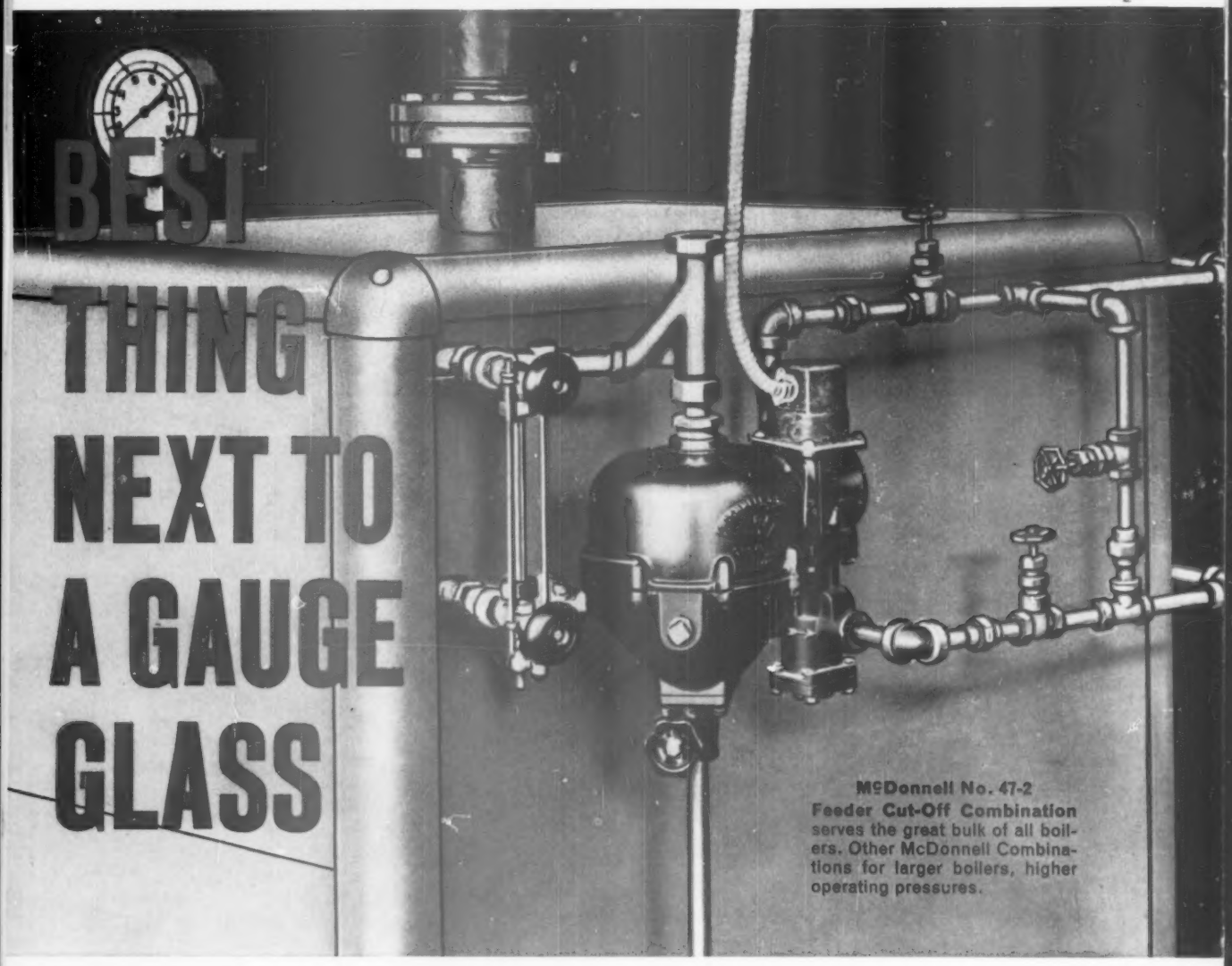
REMEMBER: It costs more to clean a nozzle than to replace with a new, precision, guaranteed-uniform Monarch Nozzle.

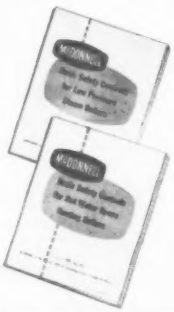
FOR BOILER WATER WATCHING



McDonnell No. 47-2 Feeder Cut-Off Combination serves the great bulk of all boilers. Other McDonnell Combinations for larger boilers, higher operating pressures.

McDonnell Feeder Cut-off Combination

It's a story that cannot be repeated too often. A low water condition can happen in any boiler, at any time, for any of dozens of reasons. And that includes hot water boilers too, *where you don't even have a gauge glass to begin with.* ☆ There are two accepted approaches to the problem—a boiler feeder which adds water *mechanically* as needed to maintain a safe level, or a low water cut-off which acts *electrically* to stop the burner if water level gets too low. ☆ If each one is a good idea, then it stands to reason that the one best answer is to use both together—a combined mechanical feeder and electrical cut-off. ☆ No one will argue with you either if you make your choice from the McDonnell line of feeder cut-off combinations—the best-known, most widely used products of their kind.



Here are the facts that will enable you to tell your story with complete conviction. Step by step they show just what controls are needed, and where, and why—in simple terms even your customers can understand. There's one for Steam Boilers (Bulletin L-711) and a companion one on Hot Water Boilers (Bulletin P-30). Write for your copies.

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